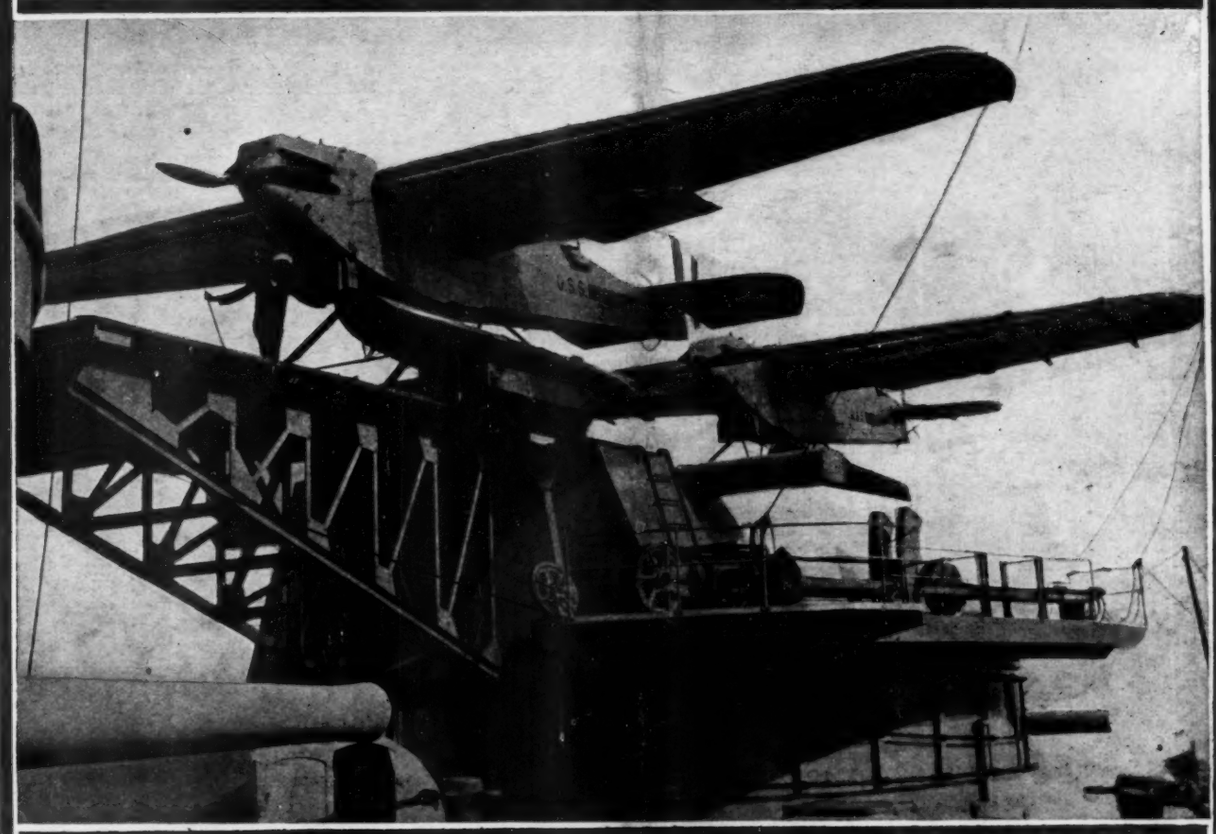
AVIATION

The Oldest American Aeronautical Magazine

JANUARY 19, 1925 Issued Weekly PRICE 10 CENTS



The Fleet Air Force—Glenn Martin observation planes on board the battleship Mississippi

VOLUME XVIII

NUMBER 3

SPECIAL FEATURES

THE NINTH PARIS AVIATION SALON

AIR SERVICE APPROPRIATIONS DEBATE

ITALY ORGANIZING AIR LINE TO NEAR EAST

GARDNER PUBLISHING CO., Inc.
HIGHLAND, N. Y.
225 FOURTH AVENUE, NEW YORK

Entered as Second-Class Matter, Nov. 23, 1920, at the Post Office at Highland, N. Y. under Act of March 3, 1879.

BOEING PURSUIT

Recognized by Military Services as the Finest Single Seater Fighter in the World

The ORIGINAL combination of:

An Underslung Sloping Core Radiator;

A Small Body properly arranged;

A Semi-thick Airfoil Section of True Contour throughout the entire length of both the Small Elliptical Lower Wing and the Larger Tapered Upper Wing;

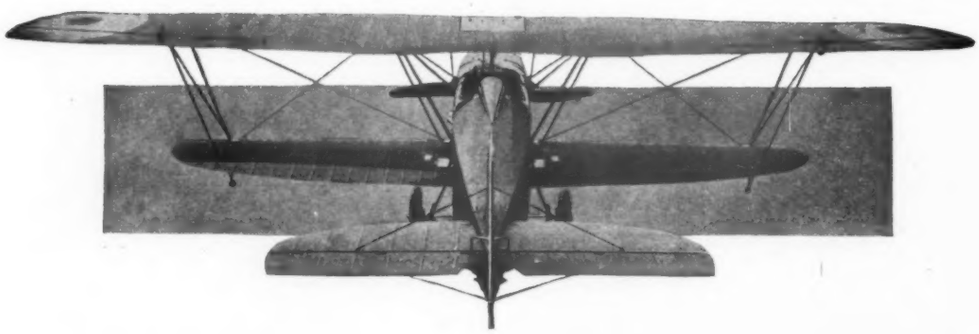
A Single Bay Biplane with external brace wires in Front Truss Only;

An ideal proportioning of Unbalanced Control Surfaces, giving unprecedented ease and range of control.

DESIGNED IN THE YEAR 1922; PRODUCED AND FLOWN EARLY IN THE YEAR 1923

BOEING AIRPLANE COMPANY

SEATTLE, WASHINGTON



JANUARY 19, 1925

AVIATION

VOL. XVIII. NO. 3

Published every Monday

CONTENTS

Editorials	69	Arguments in Favor of a United Air Force	79
The Ninth Paris Aeronautic Salon	70	New Mexican Airplanes	80
A Canadian View on Air Legislation	73	$100,000,000 Air Fund Project	80
New Light Steam Motor	73	British Air Mission in Roumania	80
Italian Airships Building	73	A Strange Message	80
The Air Service Appropriations Debate	74	Airports and Airways	81
Italy Organizing Air Line to the Near East	78	United States Air Forces	82

GARDNER PUBLISHING COMPANY, Inc., *Publishers*

GENERAL AND EDITORIAL ROOMS: 225 FOURTH AVENUE, NEW YORK

Publication office

HIGHLAND, N. Y.

Subscription price: Four dollars per year. Single copies ten cents. Canada, five dollars. Foreign, six dollars a year. *Copyright 1925, by the Gardner Publishing Company.*

Issued every Monday. Forms close ten days previously Entered as second-class matter Nov. 22, 1920, at the Post Office at Highland, N. Y., under act of March 3, 1879.

The weekly issue of AVIATION that you miss,

because you are not a regular subscriber, may contain the article, news story, picture or advertisement which you could have used with profit.

If you are a Service or civilian flier AVIATION is an indispensable adjunct to your calling, because in each weekly issue it publishes more service and commercial flying news than appears in any monthly; and, more important, it is NEWS when it appears in AVIATION.

AVIATION is written and edited by a staff trained to the aeronautical viewpoint for the man who is definitely interested or engaged in aeronautics. It presents fully and accurately each week the latest news and technical developments.

Descriptions, photographs and drawings of the latest aircraft appear first in AVIATION and frequently in no other magazine.

For less than eight cents a week—Four Dollars a year—you will receive 52 issues of the only American weekly aircraft publication and the recognized trade authority.

A LIMITED SPECIAL OFFER:

Pin a Two Dollar Bill to the coupon and we will enter your trial order for the next 26 issues.

The oldest American Aircraft Magazine

AVIATION

The only American Aircraft Weekly

AVIATION — 225 4th Avenue, New York.

Send me the next 26 issues of AVIATION. Two Dollars to cover is enclosed.

_____

_____

Announcing —

REDUCTION in RATES of Flying Instruction

THE CURTISS EXHIBITION COMPANY having disposed of their surplus JN airplanes under their offer of a free plane with each flying course, announce the following rates for dual instruction:

Complete Course, including Flying and Mechanical Training $300.00

Flying instruction by the hour 35.00
(No deposit required to cover breakage)

Instruction given Winter and Summer
Enrollments accepted at any time

We still have a few JN's and Standards in first class condition for sale at reasonable prices. Customers purchasing these can arrange for *instruction on their own machines at $10.00 per hour.*

Machines will be provided at reasonable rates for students who wish to keep in practice *after completing their flying training.*

The school will be operated under the same safe and sane policy which has enabled us to train over 350 pilots since the war without a serious accident.

Write for enrollment blank.

THE CURTISS EXHIBITION CO., Inc.
Garden City, N. Y.

L. D. GARDNER
PRESIDENT

L. D. WEBSTER
TREASURER

GEORGE NEWBOLD
BUSINESS MANAGER

AVIATION

LADISLAS D'ORCY
EDITOR

VIRGINIUS E. CLARK
EDWARD P. WARNER
RALPH H. UPSON
EDMUND T. ALLEN
CONTRIBUTING EDITORS

VOL. XVIII JANUARY 19, 1925 No. 3

The Paris Aero Salon

THE Ninth Paris Aero Salon, of which a comprehensive summary appears in this issue from the authoritative pen of John J. Ide, Technical Assistant in Europe of the National Advisory Committee for Aeronautics, offers some extremely interesting pointers of the trend of airplane design in France. For, although the exposition was international in name, French aircraft were in great preponderance.

First of all, it is to be noted that while there were exhibited at this Salon less novelties than in past years, there was more real progress to be seen. Freakish machines were notable by their absence, and many "advanced" designs which had been shown at the previous Salon and which had seemed of doubtful practical value, reappeared in a very much rationalized form.

The second point to be remarked is that the monoplane is beginning to crowd out the biplane from its hitherto dominant position. The latest French tendency appears to be to rely on the monoplane form of wing arrangement for all types of ships with minor variations: full cantilever wings, strut braced or wire braced wings and "sesquiplane" arrangement, that is, a large upper wing and a very small lower one. While the monoplane has always been the French type of design *par excellence*, it should be noted that the strut braced monoplane wing is a distinctly American development which originated with the Loening fighting monoplane and which since has been perfected in the Loening Air Yacht.

In this country, where for some inexplicable reason there has always been a strong tendency to discount the value of the monoplane as compared to the biplane, particularly for high speed work, it might perhaps be well to reconsider this position, now that the world's straightaway speed record has been recaptured by France with a monoplane.

Third, there is the very evident fact that metal construction is making considerable headway in France. While construction methods are still at great variance from one another, as a rule, French constructors use duralumin instead of steel in all structural parts, and fabric in preference to metal or plywood for covering wings and fuselage. The much greater facility a fabric covered wing offers for inspection and repair as against a wing having a metal skin or a plywood skin is given as the reason for the preference. The almost exclusive use of light aluminum alloys in structural parts, on the other hand, is explained by the fact that France is one of the world's largest producers of bauxite, from which aluminum is produced, and thus can build aircraft cheaper from aluminum alloys than from high grade steels in thin sections which are mostly imported from England. These facts also explain why the latter country, which has no bauxite deposits, tends strongly toward steel aircraft construction. There is still another reason why France is attempting to substitute in airplane construction aluminum alloys for timber, and that is, that spruce has to be imported from North America, which in case of war might be impracticable. It is good to keep these factors in mind when considering the relative merits of aircraft materials. One given material may be as good as another one, and yet for one particular country one of the two may be vastly superior, not for structural reasons but simply for economic or political reasons, although climatic considerations also influence the choice.

In this country, where there are such vast natural resources of all sorts of timber applicable to aircraft construction, the relative merits of aircraft materials should carefully be examined. While the welded steel fuselage is probably the superior of the wood fuselage on account of its greater independence from climatic changes and cheapness of construction, it is by no means so certain that, with the excellent timber we have available, steel or light alloys are necessarily a better material for wings than are wood and fabric, nor that an all-metal plane will in every case and in every climate of the United States give better all-round service than a ship of composite construction. Generalizations usually lead to hasty and inaccurate estimations. This is particularly true in aircraft design and construction.

Dayton Wins

BY the time this is read by our readers Congress will probably have authorized the Air Service to move McCook Field to the new site given by the citizens of Dayton.

AVIATION has opposed the final decision on the moving at this time for reasons that need not be given again. The local pride that has prompted Dayton to desire to retain the Engineering Division is fully understandable and laudable. The differences of opinion have arisen largely from the national point of view conflicting with local pride.

It has been a satisfaction to know that in presenting the case against the moving at this time, AVIATION has reflected what it believes to be the unanimous opinion of the aeronautical industry, the general feeling in the Air Service outside the small group that believed in accepting the only opportunity offered, and the matured opinion of many who have lived at McCook Field. Now that the matter is settled, there will be no further need for controversy on the part of AVIATION.

Regarding McCook Field itself, there will probably be less and less need for criticism. Its present Commanding Officer, Major Curry, is not only an able administrator but has had the great advantage of experience with the Engineering Division from without before he took over the command. With the eyes of Congress and everyone interested in aeronautical development turned toward McCook Field, it is very improbable that conditions that have caused complaint heretofore will be repeated.

The commencement of the New Year is bringing the Air Service under the most intensive scrutiny. It will need all the support from its friends that can be mustered. AVIATION has been a severe critic of some of the activities in the past. It is to be hoped that the pressing necessity for this course is over and that there may be more harmonious action among all those who are sincerely trying to advance aerial progress.

The Ninth Paris Aeronautic Salon

By JOHN JAY IDE

Technical Assistant in Europe National Advisory Committee for Aeronautics

The ninth Paris Aero Salon was held in The Grand Palais from Dec. 5 to 21, 1924. It was only nominally international as all the exhibitors of aircraft were French except the Dutch Fokker, Koolhoven and Pander firms and the British Armstrong-Whitworth Co., the makers of the Siddeley airplanes and engines. However, the Show was most interesting due to the progress made during the two years' interval since the last exhibition.

In the table accompanying this article are given the characteristics of every type of aircraft shown arranged alphabetically according to makers and it is now proposed to summarize the exhibits according to categories.

The Air Liners

Transport Airplanes.—This class was marked by the first appearance of three Latécoère monoplanes known as types 15, 16 and 17. Type 16 (400 hp. Lorraine) which has been under test at Toulouse since last spring was designed for carrying mails, passengers and freight.* The mail compartments are placed in the roots of the thick tapered cantilever wings which likewise house the slip type fuel tanks. The pilot sits above the plane and the four passengers are placed below it in two roomy cabins. Type 17 (300 hp. Renault), an externally braced monoplane, has been built primarily for postal work, but is capable of carrying four passengers in the exiguous cabin. The mail compartment is in the center section of the plane. Type 15 is a larger machine, having two Lorraine engines, placed laterally in nacelles These engines are the old 275 hp. models, but so modified as to develop only 220 hp. at the speed utilized. The large cabin accommodates six passengers. The construction of the various Latécoère airplanes is a mixture of wood and duralumin, the latter material being used for the fuselages.

The Dewoitine 14, contrary to the general practice of its designer, is entirely of wood except for the front part of the fuselage with the engine bed and pilot's seat. This duralumin portion is detachable from the main portion of the fuselage and the engine bed is separately detachable, permitting rapid replacement of the power plant. The engine which will be fitted as standard is the 450 hp. W type Lorraine, but the machine shown had a 400 hp. Lorraine. The landing gear consists of duralumin tubular axle and struts; incorporated in the forward struts are steel coil spring shock absorbers reminiscent of the 1907 R.E.P. monoplane. The baggage hold is located approximately at the center of gravity and behind it is a cabin for four passengers. All control surfaces are balanced and the stabilizer is adjustable in flight. The fuel tanks in the wings can be rapidly emptied by a rip panel.

Only Two Light Planes

The well known "Jabiru" transport plane exhibited by Farman had two 400 hp. Lorraine engines. A similar machine with four 180 hp. Hispano-Suizas won the Grand Prix des Avions de Transport for 1923 and 1924.

The Nieuport Co. showed their very neat little type 38 biplane. The cabin for two passengers could be replaced by a cockpit for training or photographic surveying. Also the 190 hp. Renault could be quickly exchanged for a 180 hp. Hispano-Suiza if desired.

The Franco-Roumanian Air Transport Co. showed a classic Spad 46 used on the Paris-Prague air line. There was also shown the fuselage of a Caudron 81 three engined biplane.

Light Airplanes.—The Show contained two light planes—a Dewoitine 7 and a Pander type D. The former is an enlarged edition of the monoplane flown in America by Barbot and is equipped with a new 6 cylinder in line 2 liter Vaslin engine. The Pander is a very pleasing little monoplane made at The Hague and equipped with a 25 hp. Anzani engine.

Training and Touring Airplanes.—The training and/or touring airplanes included the Béchereau (a small monoplane with wire bracing), the Caudron 59, 127 and 168 (the last two formerly known as types 27 and 68), the Hanriot 19 and 34 (the latter a new parasol monoplane having a plane of mixed wood and duralumin construction containing the tank in the center section) and the Morane-Saulnier 35 (80 hp. Rhône), 43 (180 hp. Hispano-Suiza) and 50 (120 hp. Salmson). The last named is a cleverly designed parasol monoplane with a quickly interchangeable power plant and landing gear. When this machine uses the 180 hp. Hispano-Suiza it is known as type 51. There were also shown the Potez VIII and S.E.C.M. XXII, which have remained unchanged since 1922.

Racing Airplanes.—The solitary racing machine exhibited was the beautifully streamlined Bernard (S.I.M.B.) monoplane (450 hp. W type Hispano-Suiza) derived from the Bernard pursuit monoplane exhibited in 1922, but made of wood instead of metal.

Some Missing Pursuit Ships

Pursuit Airplanes.†—In this category Blériot (who has not exhibited since 1921 and was allotted a poor stand under the gallery) showed the standard production Spad 81 (300 hp. Hispano-Suiza) and Spad 51 (420 hp. "Jupiter"). The new Spad 61 (450 hp. Lorraine), all reports to the contrary notwithstanding, was not exhibited, being at the time under test at Villacoublay. The Spad 51 is remarkable both as to climb and maneuverability, due to its light engine and concentrated weights. It has officially reached 16,400 ft. altitude in 13 min.

Other notable absentees among the announced exhibits were the new all-metal Dewoitine D9 monoplane (420 hp. "Jupiter") and D15 biplane (450 hp. Hispano-Suiza), both types being still under test. However, the well known D1 (300 hp. Hispano-Suiza) was displayed not only on the Dewoitine stand but also by S.E.C.M. (which holds the French production rights for all of M. Dewoitine's designs) and the Ministry of War. The D1 is being produced in quantities not only for the French Army and Navy but also for Roumania, Czecho-Slovakia and in Italy.

Other pursuit airplanes included the Fokker DXIII, derived from the DXI but with a Napier "Lion" instead of a 300 hp. Hispano-Suiza, and the Hanriot 31 (550 hp. Salmson) which is entirely of duralumin construction except for the wood wing ribs. The pilot's seat is adjustable for height and is protected from below by a steel armor plate.

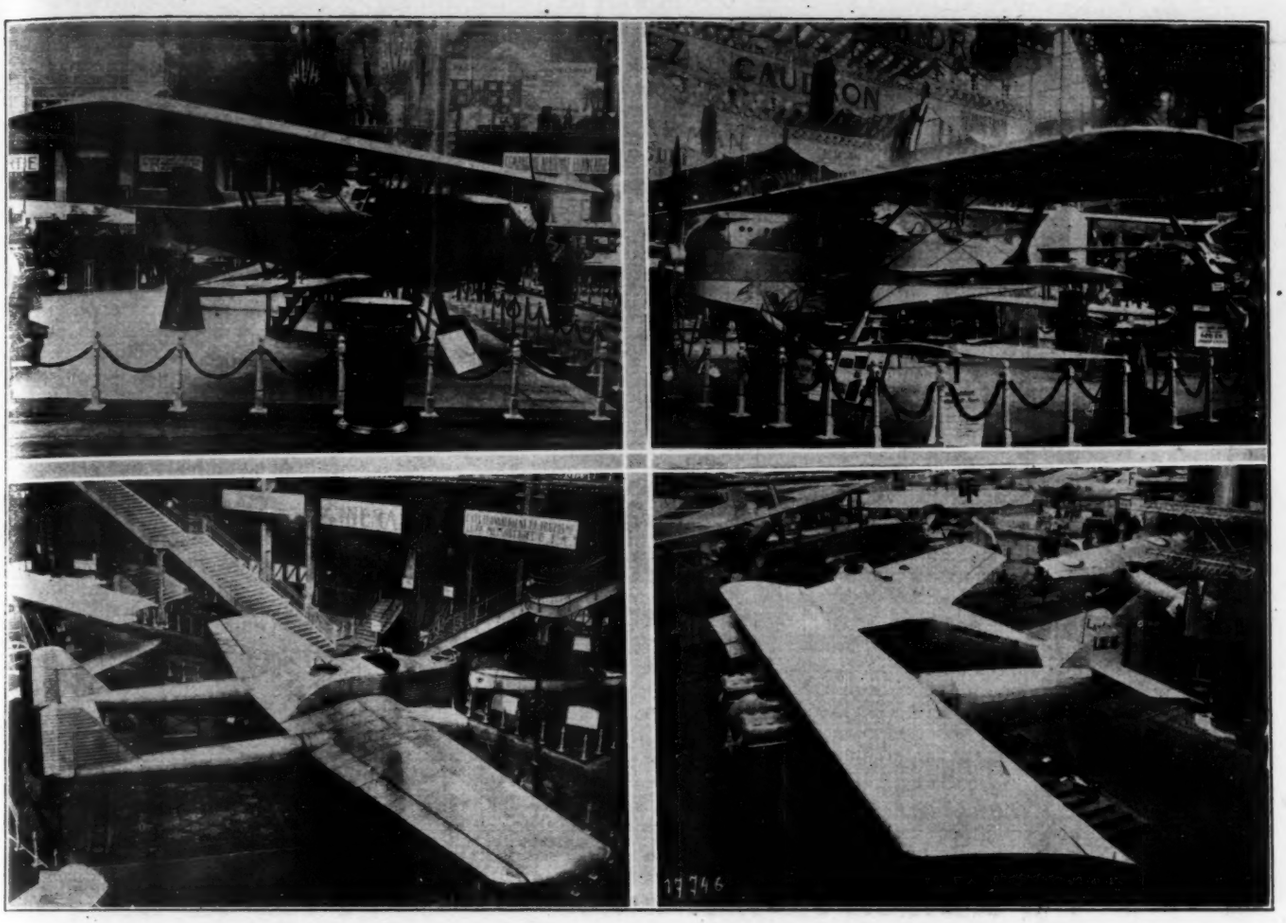
New Fighting Planes

The Nieuport Co. showed the type 29 first produced at the end of 1918, and Potez the new type 26 with interchangeable engine sections for the 450 hp. V type Hispano-Suiza or 450 hp. W type Lorraine. For the former engine there is a special Lamblin radiator under the crankcase and pivoted so that the exposed surface may be controlled. A normal nose honeycomb radiator is used for the Lorraine, thus partly compensating for the change in weight distribution due to the shorter engine. The landing gear is of an interesting design with an axle pivoted at the center and allowing great freedom of movement to the wheels. The shock absorbers, consisting of rubber disks in compression, are inside the forward tubes of the V struts. The Potez 26, like all the pursuit machines of the new French program, has four machine guns—two Vickers firing forward through the propeller and two Darne guns on the upper plane and firing clear of the propeller disk.

A Siddeley "Siskin" Mark V (385 hp. Siddeley "Jaguar") was shown with the wing and fuselage covering removed, exposing the mixed steel and wood construction. The particular machine was one of an order for Roumania.

Fighting Airplanes.—The Nieuport Co. exhibited a two

*This plane was fully described in the Nov. 24, 1924, issue of AVIATION.
†See in this connection the article "Some Recent French Pursuit Airplanes" in the Jan. 5 and 12, 1925, issues of AVIATION.—EDITOR.



Striking exhibits at the Paris Aero Salon—1, Potez 26 pursuit plane; 2, Levasseur two-place observation marine plane; 3, Schneider bombardment escort plane; 4, Latecoere 15 and 16 air liners; in the background, to the right, Dewoitine D1 pursuit plane

seater fighter—the 42C2 which is practically identical with the new 42 single seater pursuit monoplane except for the addition of a very small lower plane. The power plant is a 450 hp. Hispano-Suiza mounted in a duralumin bed which is extended backward to include the pilot's seat. The metal portion is attached to a plywood fuselage which, unlike that of the type 29, is made in two halves greatly facilitating construction over the form. The tanks placed in the wings are arranged to slip.

A Bombardment Escort Plane

The Schneider 10 multiplace fighting monoplane bore the distinction of being the only entirely metal machine (including wing covering) at the Salon. The material used was the Schneider alloy "alférium." The design was unusual, there being two fuselages, each accommodating in the nose a 400 hp. Lorraine engine. The crew was carried in a central nacelle on top of the plane.

Observation and Day Bombing Airplanes.—The Bréguet exhibit included a complete type 19 similar to that of Pelletier Doisy's Paris-Shanghai flight and a skeleton fuselage of the latest type 19 bomber with the 480 hp. Renault. The very complete equipment is remarkably well fitted into the fuselage with no protuberances to increase the head resistance. As usual in French military airplanes, a S.E.M.A.P.E. leak proof tank is fitted and the Bouillon or Hermann-Auclair fire extinguisher covers the carburetors.

Caudron showed the new 99 observation biplane (450 hp. Hispano-Suiza) which followed usual Caudron practice. Farman exhibited a new type with a 500 hp. Farman engine, a ship remarkable for the great length of body forward of the pilot's seat. The span of the lower plane of this airplane just equalled the tread of the landing gear.

Koolhoven, the Dutch designer, produced a much improved edition of the FK31 shown in 1922. The new machine, equipped with a large set of wings, is intended for observation. With smaller wings it becomes a two-seater fighter. The engine is a French made "Jupiter." The Potez 25 is a new observation biplane very similar to the 26 pursuit machine mentioned above.

René Tampier showed two airplanes both having the 300 hp. Hispano-Suiza engine. The T3 is an armored edition of the well known "avion-automobile," while the T4 is a normal airplane but equipped with a second small engine used for starting and supplying lighting and radio.

Night Bombers.—Two complete night bombers were shown: the Lioré & Olivier 12 (two 400 hp. Lorraine) and the new S.E.C.M.12 (550 hp. Renault). The latter is entirely of duralumin and the skeleton of the upper wing weighs only 550 lb. The center section of a Farman BN4 with four 500 hp. Farman engines was also exhibited. This machine is a modern edition of the quadrimotored Farman shown in 1921 and carries three tons of bombs.

A Novel Marine Airplane

Seaplanes, Amphibians and Marine Airplanes.—Louis Schreck showed the F.B.A.19 hull amphibian with the new 350 hp. 12 cylinder Hispano-Suiza engine placed well forward and driving a tractor screw. The 19 is an enlargement of the 17 (shown by the Ministry of Marine) and has a plywood engine nacelle, wing floats and top fairing of the hull.

C.A.M.S. exhibited a 33B bombing flying boat having two 260 hp. Marine type Hispano-Suiza engines placed in tandem. On the Navy stand was a Blanchard HB3 bombing flying boat with a similar power plant but arranged laterally between the wings and with special attention paid to ease of replacement.

On the stand of the Aéronavale Air Line was the hull of

CHARACTERISTICS OF AIRPLANES AND SEAPLANES EXHIBITED AT PARIS AERONAUTICAL SALON DEC. 5-21, 1924

PREPARED BY JOHN JAY IDE

Technical Assistant in Europe, National Advisory Committee for Aeronautics

No.	Aircraft: Make	Model	Type	Purpose	No. Seats	Engines: No.	Make	Model	hp.	Dimensions: Span ft.	Length ft.	Height ft.	Wing: Area sq. ft.	Weights: Weight empty lb.	Useful load lb.	Total weight lb.	Loading: lb. / sq. ft.	lb. / hp.	Performances: Speed at g.l. mi./hr.	Climb: 3280 ft. min.sec.	6560 ft. min.sec.	9840 ft. min.sec.	13120 ft. min.sec.	16400 ft. min.sec.	Ceiling ft.	Duration hr.	No.
1	Bechereau	ET1	Monoplane	Training	1	1	Salmson	AC9	120	23.0	18.5	7.2	120	1030	342	1372	11.4	11.4	120								1
2	Bernard (S.I.M.B.)	V2	"	Racing	1	1	Hispano-Suiza	12G	450	32.5	22.0	6.6	125	2200	390	2590	20.7	5.7	260								2
3	Blanchard	HB3	Biplane F.B.	Bombing	3	2	" "	8Fd	260	62.0	44.6	13.8	916	5589	3230	8819	9.6	17.0	102	6′ 30″	16′ 0″	29′ 0″			14760		3
4	Bleriot-Spad	46	Biplane	Transport	6	1	Lorraine	12Db	400	41.5	29.7	10.5	506	3245	2045	5290	10.4	13.2	122				50′ 0″		13780	3	4
5	" "	51	"	Pursuit	1	1	Gnome-Rhone	"Jupiter"	420	31.0	21.1	10.2	280	1746	1069	2815	10.0	6.6	164	1′ 41″	3′ 50″	6′ 19″	9′ 17″	13′ 0″	29520	2.7	5
6	" "	81	"	"	1	1	Hispano-Suiza	8Fb	300	31.5	21.0	9.5	323	1850	926	2776	8.6	9.2	155					14′ 0″	27880	3	6
7	Breguet	19A2	"	Observation	2	1	Lorraine	12Db	400	48.6	31.2	10.9	539	2672	1786	4458	8.3	11.1	133	3′ 30″	7′ 28″	12′ 41″	19′ 27″	29′ 53″	21980		7
8	"	19B2	"	Bombing	2	1	Renault	12Kd	480	48.6	31.2	10.9	539	2800	2292	5092	9.0	10.6	140	4′ 7″	8′ 14″	12′ 59″	19′ 35″	29′ 19″	22960		8
9	C.A.M.S.	33B	" F.B.	"	3	2	Hispano-Suiza	8Fd	260	57.8	43.7	15.1	991	5952	3239	9182	9.3	17.6	109			40′ 0″			14760	4	9
10	Caudron	59ET2	Biplane	Training	2	1	" "	8Ac	180	33.6	25.6	8.9	288	1543	661	2204	7.6	12.2	112								10
11	"	81	"	Transport	10	1	Lorraine	12Db	400																		
				"	10	2	Salmson	CM9	260	85.3	55.8	15.7	1562	9513	4596	14109	9.0	15.3	100								11
12	"	99	"	Observation	2	1	Hispano-Suiza	12H	450	45.9	31.8	11.1	474	2645	1323	3968	8.4	8.8	140*						24600*	3.5	12
13	"	127	"	Training	2	1	Rhone	9C	80	39.4	27.2	9.3	371	1130	610	1740	4.7	21.7	82		16′ 0″				13120	3.5	13
14	"	168	"	Touring	2	1	Anzani	6A	70	29.5	20.0	7.9	216	754	507	1261	5.8	18.0	87		16′ 0″				13450	4	14
15	Dewoitine	1C1	Monoplane	Pursuit	1	1	Hispano-Suiza	8Fb	300	37.7	24.6	9.0	215	1808	926	2734	12.7	9.1	153		4′ 15″	6′ 50″	10′ 30″	16′ 6″	27880		15
16	"	7	"	Touring	1	1	Vaslin		30	41.3	18.4	6.9	162	419	242	661	4.1	22.0	93				50′		13120	6	16
17	"	14	"	Transport	5	1	Lorraine	12Db	400	61.7	40.0	11.0	485	3748	2425	6173	12.7	15.4	130							4	17
18	Farman	A2	Biplane	Observation	2	1	Farman	12WE	500	49.2	34.4	11.2	560	3307	2204	5511	9.8	11.0	136*						22960*		18
19	"	BN4	"	Bombing	4	4	"	12WE	500	114.8	64.6	21.3	2865	15430	9920	25350	8.9	12.7	102						16400		19
20	"	"Jabiru"	"	Transport	14	2	Lorraine	12Db	400	62.3	44.9	14.7	873	7055	4409	11464	13.1	14.3	129						13500		20
21	Fokker	D XIII	"	Pursuit	1	1	Napier	"Lion"	450	36.1	25.9	9.5	231	2601	948	3549	15.4	7.9	165	1′ 45″	3′ 45″	6′ 0″	9′ 0″	14′ 30″	26240	2.5	21
22	Hanriot	19	"	Training	2	1	Hispano-Suiza	8Ac	180	30.1	23.6	9.8	287	1455	639	2094	7.3	11.6	105						18040		22
23	"	31	"	Pursuit	1	1	Salmson	CM18	550	37.7	23.5	11.8	365	2522	1258	3780	10.4	6.8	155*						26240*		23
24	"	34	"	Training	2	1	Rhone	9C	80	37.4	22.8	9.8	237	874	551	1425	6.0	17.8	84						14760		24
25	Koolhoven	FK31	Monoplane	Observation	2	1	Gnome-Rhone	"Jupiter"	420	45.1	25.6	10.2	290	2645	2160	4805	16.5	11.4	135	3′ 30″		14′ 0″		35′ 0″			25
26	Latecoere	15	"	Transport	7	2	Lorraine	8Bd	220	59.1	38.9	10.8	582	3748	3086	6834	11.7	15.5	112						13120	5	26
27	"	16	"	"	5	1	"	12Db	400	58.4	42.0	11.5	517	3682	1830	5512	10.6	13.7	112						13120		27
28	"	17	"	"	5	1	Renault	12Fe	300	48.2	31.5	11.9	396	2535	1653	4188	10.5	13.9	124						13120		28
29	Levasseur	AM2	Marine Biplane	Fighter	2	1	Hispano-Suiza	12H	450	40.7	28.9	10.2	399	2535	1433	3968	9.9	8.8	140					22′ 0″	24600	4	29*
30	"	AM3	" "	Fleet Spotter	3	1	Lorraine	12Db	400	47.6	30.8	12.5	625	2943	1686	4629	7.4	11.1	112			24′ 0″			17380		30
31	Liore-Olivier	12BN2	Biplane	Bombing	2	2	"	12Db	400	77.1	43.1	13.4	1271	6704	3373	10077	7.9	12.5	122						18040		31
32	" "	H13-4	Biplane F.B.	Transport	6	1	"	12Ew	450	52.5	37.7	13.8	625	3748	1984	5732	9.1	12.7	100*								32
33	Morane-Saulnier	35EP2	Monoplane	Training	2	1	Rhone	9C	80	34.7	22.2	11.8	194	992	551	1543	8.0	19.3	84	4′ 40″	11′ 0″	20′ 40″	45′ 0″		13940	3	33
34	" "	43	Biplane	"	2	1	Hispano-Suiza	8Ac	180	35.5	25.8	10.2	307	1764	705	2469	8.0	13.7	102	3′ 37″	7′ 41″	14′ 21″	22′ 39″		18040	3	34
35	" "	50	Monoplane	Touring	3	1	Salmson	AC9	120	38.4	25.1	10.2	259	1345	772	2117	8.2	17.6	104						16400		35
36	Nieuport	29C1	Biplane	Pursuit	1	1	Hispano-Suiza	8FB	300	31.8	21.1	8.7	289	1852	747	2599	9.0	8.7	146	2′ 35″	5′ 35″	9′ 10″	13′ 30″	19′ 0″	25580	2.5	36
37	"	38	"	Transport	3	1	Renault		190	35.7	27.6	11.3	434	2094	881	2975	6.8	15.6	100						13120		37
38	"	42C2	"	Fighter	2	1	Hispano-Suiza	12H	450	39.4	24.6	9.8	352	2756	1521	4277	12.1	9.5	168						22960		38
39	Pander	D	Monoplane	Touring	1	1	Anzani		25	26.2	16.2	5.4	116	419	260	679	5.8	27.1	80								39
40	Potez	VIII	Biplane	"	2	1	"	6A	70	26.2	18.8	8.2	216	744	485	1239	5.7	17.7	90		16′ 0″				13120		40
41	"	25A2	"	Observation	2	1	Lorraine	12Ew	450	45.9	29.5	11.5	366	2711	1575	4286	8.6	9.5	143*					24′ 0″*	23620*		41
																			(6560 ft.)								
42	"	26C1	"	Pursuit	1	1	Hispano-Suiza	12H	450	39.4	26.2	10.3	285	2425	992	3417	9.9	7.5	155*					20′ 0″*	27880*		42
																			(16400 ft.)								
43	S.E.C.M.	12BN2	"	Bombing	2	1	Renault	12MA	550	62.3	45.9	13.4	851	3880	3615	7495	8.8	13.6	124*					45′ 0″*		6	43
44	"	XXII	"	Training	2	1	Hispano-Suiza	8Ac	180	30.4	23.6	8.2	216	1515	705	2220	10.3	12.3	119		8′ 4″	13′ 50″	21′ 28″				44
45	Schneider	10M	Monoplane	Fighter	3	2	Lorraine	12Db	400	60.7	38.4	10.8	614	5842	2204	8046	13.1	10.0	136*						22960*		45
																			(16400 ft.)								
46	Schreck	17HTM2	Biplane B.A.	Touring	2	1	Hispano-Suiza	8Ac	180	42.1	29.3	10.5	393	2160	595	2755	7.0	13.3	104		9′ 0″		30′ 0″				46
47	"	19	" "	Observation	3	1	" "	12I	350	47.2	31.0	12.5	497	2976	1257	4233	8.5	12.1	114		10′	18′ 0″	29′ 45″		19680	2.5	47
48	Siddeley	"Siskin" MkV	Biplane	Pursuit	1	1	Siddeley	"Jaguar"	385	28.2	21.5	9.5	253	1821	661	2482	9.8	6.4	152	2′ 20″	4′ 45″	7′ 6″	10′ 0″	14′ 0″	26240		48
49	Tampier	T2	"	Touring	2	1	Clerget	9B	130	34.4	23.0	8.2	243	1102	507	1509	6.2	11.6	102						18040		49
50	"	T3	"	Observation	2	1	Hispano-Suiza	8Ac	300	45.9	29.8	9.7	410	2712	815	3527	9.3	11.7	115						19680		50
51	"	T4	"	"	2	1	" "	6Ac	300	37.7	29.1	11.5	388	2678	849	3527	9.8	11.7	124						19680		51

Abbreviations: F.B. = Flying Boat; B.A. = Boat Amphibian.
*estimated.
Notes on Exhibits: No. 8 Fuselage only.
No. 11 Fuselage only.
No. 19 Center section only.
No. 32 Hull only.

a new Lioré & Olivier flying boat having the Linton-Hope type of flexible construction instead of the usual rigid box section hull. This seaplane will have one 450 hp. Lorraine engine instead of the two 180 hp. Hispano-Suizas used on the standard H13.

Levasseur exhibited two so-called "marine airplanes," which are land planes designed to alight on water if necessary and then to be towed. For this purpose the landing gears are arranged to drop and the fuselages are watertight. The two seater fighter has a 450 hp. Hispano-Suiza and the fleet spotter a 400 hp. Lorraine. Both have the Reed duralumin propeller for which M. Levasseur posseses the French rights.

To complete the list of aircraft shown it may be mentioned that the Ministry of War exhibited one each of the following: Morane-Saulnier 35, Morane-Saulnier 43, Dewoitine D1, Bréguet 19A2, Spad 81C1, Hanriot 19.

The Ministry of Marine's exhibit consisted of a Blanchard HB3 hull seaplane, a C.A.M.S. 33B hull seaplane and a Schreck FBA17 amphibian.

The French Under Secretariat of State for Aeronautics had a remarkably interesting exhibit covering the work of its various dependencies—the Technical, Production and Air Navigation Services. The models of the various wind tunnels and the full scale testing station at St. Cyr were beautifully made.

Ed. Note.—The more important of the new aircraft exhibited at the Paris Salon will be fully described in forthcoming issues of AVIATION.

A Canadian View on Air Legislation

A Canadian pilot who desires to remain anonymous, writes to AVIATION as follows:

"It is noted that the opponents of air legislation in your country claim more commercial fliers than any other country in the world, and give as the reason for the lack of them in England and Canada the 'red tape' in connection with getting licenses and airworthiness certificates.

"I do not think that Air Regulations in Canada have been in any way a hindrance to bona fide commercial aviation concerns. On the contrary, such firms welcome any examination of their machines which the Government requires and have always proved more than willing to carry out any strengthening or modification that is found necessary to bring their aircraft up to an acceptable standard of airworthiness.

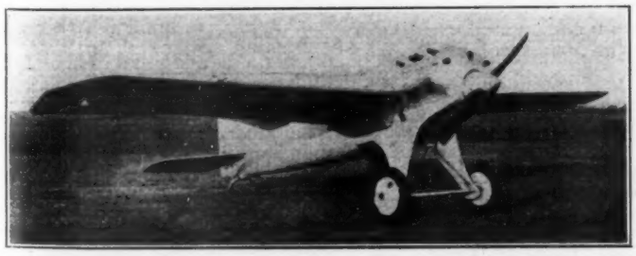
"The Department of National Defence may be consulted at any time in regard to aircraft that civilian concerns propose to use, and the Department's specifications for material are of assistance to designers and manufacturers.

"Air Regulations were primarily passed, and are at present enforced, with the object in view of making flying safe and profitable."

New Light Steam Motor

According to the *New York Times*, Maj. Jarvis Butler, secretary of the Army-Navy Joint Aeronautical Board, has indicated the possibility of tests being made of a new lightweight steam power motor, invented by H. Crossland Pfaff, a New York mechanical engineer, intended for use in airplanes and automobiles. The Pfaff motor was brought to the notice of Major Butler during a visit to a New York club last week.

"I have never met Mr. Pfaff, nor communicated with him," said Major Butler. "His invention was called to my attention by a New York newspaper man during a visit I made to New York last week. As explained to me, the Pfaff motor is a lightweight steam engine for which he claims to be able to develop one horsepower per pound. If it can do that it would be a wonder. Any engine that can develop a horsepower per pound would naturally arouse the enthusiasm of any one interested in aviation—it would be the greatest motor in the world. As I understand the principle of the motor, it uses a new type of burner which utilizes No. 2 crude oil.



The Ferbois racer (450 hp. Hispano; Lamblin wing radiator) on which Warrant Officer Bonnet made the new world straight-away speed record of 278.8 mi./ hr.

P. & A. Photos

Warrant Officer Felicien Bonnet

Italy Builds More Airships

Four airships of the Nobile semi-rigid type are under construction in the Italian government airship factory at Vigna di Valle, near Rome

The largest of these ships, the N-3, will be 600 ft. long, 80 ft. wide at the master diameter, and 90 ft. high, with a capacity of 1,870,000 cu. ft. The power plant will consist of six 240 hp. Maybach engines which will be mounted in five power cars, the stern car having two engines. The maximum speed will be 74 mi./hr. and the cruising range, with full load, 2500 mi.

Next in size is the N-2, which will have the same characteristics as the N-1, completed last year (660,000 cu. ft. capacity and 6 tons disposable load), but its construction will be considerably lightened so that a much larger useful load will be available.

In addition to these two ships there are in construction two 247,000 cu. ft. airships which will be 270 ft. long, 42 ft. in diameter and 56 ft. high. One of these ships will be built for high altitude work and will have two 110 hp. Colombo engines, while the other, designed for high speed scouting, will be fitted with two 200 hp. S.P.A. engines.

The Air Service Appropriations Debate

Congressmen Demand Information as to $433,383,281.21 Expenditure Since War—McCook Field Discussed

Two of the subjects that have been repeatedly discussed in AVIATION are being investigated both by Congress and by the Lampert Special Committee investigating the government air services. From official sources, the cost of aviation to the government has been given as over twenty million dollars a year higher than the figures published in AVIATION. Also, the McCook Field situation is being given a thorough study from the standpoint of what the government has received for the twenty million dollars spent there in the last five years, and what Dayton expects to get for its $400,000 investment.

In the five fiscal years, 1920-1924, inclusive, the War, Navy and Post Office Departments and the National Advisory Committee for Aeronautics have expended on aviation a grand total of $433,383,287.21, it was revealed at the session of the House Aircraft Investigating Committee on Jan. 5, 1925.

Mr. LaGuardia's Speech

The debate on the Army Air Service appropriation for $14,700,000 resolved itself largely into a discussion of a separate air force and the moving of McCook Field. Representative F. H. LaGuardia of New York who is the only ex-flying officer in the House, having been a major in the Air Service during the war, made a speech that occupies fourteen pages in the *Congressional Record* of Jan. 7, 1925. His remarks are divided into two parts. The first gives his reasons why he is opposed to the moving of McCook Field at this time. Extracts from this part will be found below. The second part gives a very complete record of both Army and Navy expenditures for aircraft at McCook Field, the Naval Aircraft Factory and the aeronautical companies since 1919. In a later issue this information will be reprinted in AVIATION.

In offering an amendment to strike out the McCook Field appropriation, Major LaGuardia said:

"Mr. Chairman, my amendment, which provides for reducing the total appropriation by $500,000 and striking out the authority for the expenditure of this amount as provided in lines 11 to 25 on page 38 and part of line 1 on page 39, at this time is prompted solely for what I deem to be for the best interest of aviation generally. While I doubt the wisdom of placing the engineering department of Army aviation at Dayton, I shall not discuss for the present that phase of the question. I will say that I shall oppose any offer at any time made under the same auspices as that now before us. Since 1918, in the Sixty-fifth and Sixty-sixth Congresses, and at every opportunity I have had during the present Congress, I have consistently urged the necessity of taking inventory of figuring our costs and of uniting once and forever all of the governmental aviation activities. With the exception of the National Advisory Board for Aeronautics, there has been little or no effective successful cooperation. The board has been doing great work and is the living example of the necessity of united thought, action, and expenditures in this new and necessary branch of governmental activity.

Where the Money Goes

"I have some figures to-day to add to the many previous statements that I have made on the floor of the House, which those who have followed the growth and development of aviation in this country will surely find of great interest. I will first take up the specific subject of the proposed new field at Dayton, and then if the House will bear with me, I will present figures which I have been gathering for many months which will prove conclusively that the United States Government is spending as much, if not more, than other governments in the whole world for aviation. Yet the statements made on the floor of this House so many times in the last six years remain true—that is, that the Government is not doing as much for the development of aviation as other countries. Why? For the simple reason that our activities are divided, our expenditures not wisely controlled, and large amounts used in this injudicious, competitive, disunited, uncoordinated fashion are hidden in other appropriations. But let us take up one thing at a time.

"First, a new field is proposed at Dayton, Ohio. We are asked to appropriate $500,000, which shall be available immediately, toward the transfer of the testing and experimental plant of the Air Service now located at McCook Field, Dayton, and the reestablishment on a permanent site in the same vicinity including, the provision in the appropriation says, the preparation of grounds, construction of buildings, installation of roadways and utilities, and all other expenses of whatever character connected with this project. Then we have been told that the citizens of Dayton have generously contributed the ground for this field and station.

Those Gifts to the Government

"The title has been transferred to the United States Government and we are told that we will not have to appropriate one cent for the ground. This House has had sufficient experience with gifts to the Government and that in itself should put us on notice. If there is any Member on the floor who is of the opinion that this $500,000 is all the appropriation required to make the transfer and construct the buildings, permit me at this time to relieve his mind of any such thought. That is not the case. I am sure the distinguished gentleman from Kansas [Mr. Anthony] who made such a splendid statement under the general debate a few days ago, will bear me out that this appropriation is simply for the initial costs of transferring the plant from one field to another. This appropriation, let it be clearly understood, is sufficient for the actual cost of the transfer of the machinery and property now at McCook Field to the new field and to start the work for tracks, roads, and then only for the foundation of the necessary buildings. My colleagues will find the itemized estimates for which this $500,000 will be used on page 342 of the hearings held by the subcommittee of the House Committee on Appropriations considering this very bill, and let me read them to you—

Propeller test laboratory and generator power-house foundation	$ 41,000
Utilidors	85,000
Railroads	18,000
Transformer stands	3,600
Flying field	10,000
Roads	18,000
Warehouse and museum foundations	17,900
Warehouse and museum construction (parts)	60,000
Heating plant (without equipment)	60,000
Main-building foundation	75,000
Four wells	4,000
Foundation for assembly overhaul and shops	57,000
Moving that part to be done under this appropriation	10,000
Utilities	35,000
Contingent	5,100
Total	$500,000

Cost of New Field

"General Patrick, who testified, estimates that the total amount required is about $4,000,000, and I say, and I am sure my colleagues who have had experience on appropriating committees before the Committee on Appropriations took over all appropriations, and the gentlemen now on the Appropriations Committee will agree that considering the cost of the foundations and the plan proposed by General Patrick as detailed in his testimony, the cost will be much nearer to $10,000,000 than it will be to his estimate of $4,000,000. I am not objecting to a permanent experimental station or engineering department for the Army Air Service. We must have one. It is unwise to make this appropriation at this time to settle at this particular site just because some men

out in Dayton, men who have cost this Government hundreds of millions of dollars by reason of their special Dayton interests, desire a permanent field there. Why all this hurry? Why all this speed? Because they know that the question of aviation has reached that point where it must be definitely settled and they know that when we have analyzed the cost in the last six years and taken inventory that we will settle upon a united service and that when we do that the chances of their offer being accepted will be very slim. Hence the pressure that is brought to bear at this time. But let me read further from the hearing. The chairman of the committee [Mr. Anthony] asked General Patrick, who was testifying for this particular appropriation, page 339 of the hearing, Dec. 3, 1924.

> Mr. Anthony. You mean the present testing facilities are not sufficient?
> General Patrick. They are not sufficient to test large propellers. It can not be done * * *.

Now get this—

> Mr. Anthony. Has the Navy anything of that sort?
> General Patrick. They have nothing comparable to what we must have. and we are testing all that are being tested for the Navy, anyway.
> Mr. Anthony. You propose to spend $4,000,000 on this engineering plant. What is the Navy planning to do?
> General Patrick. I do not know, sir.

The Aeronautical Board

"Gentlemen, that is just the trouble. The Army does not know what the Navy is doing, and the Navy does not know what the Army is doing. It is not their business to know. They are not required to know. They do not want to know as long as they can come here and get separate appropriations.

> Mr. Anthony. We ought to know whether they are going ahead with a duplication of this plant.
> General Patrick. We are preventing duplication by having all these matters taken up with the Aeronautical Board. One of the distinct functions of the Aeronautical Board is to consider all such things and see that there is no duplication.

"Why, gentlemen, you know the Aeronautical Board has no powers of this kind. They can not prevent the Navy going ahead and the Army going ahead. They simply can suggest. I read the recommendations of the Aeronautical Board a few days ago, when we were considering the bill to authorize the Postmaster General to establish air lines for the carrying of mails, and the Aeronautical Board has been recommending for years the avoiding of duplication, yet the duplication goes on at the cost of millions of dollars. To continue the hearing. Mr. Anthony asks:

> I do not know what the other members of the committee think about it, but personally I would be opposed to the Army going ahead and building a plant of this kind there if the Navy is going ahead with an entirely separate plant of the same kind.

"Sound judgment; good legislation; which, of course, is expected from the distinguished gentleman from Kansas [Mr. Anthony]. Now, let me call the attention of the gentleman from Kansas [Mr. Anthony], of the committee, that this very duplication is going on. A few days ago, when the naval Appropriation bill was taken up, we appropriated the annual allowance for just such a plant. The naval plant is known as the aircraft factory of Philadelphia, and we appropriated $1,500,000 in the bill, which passed this House a few days ago, as against $1,511,000 for the previous fiscal year. You will find on page 530 of the hearings before the subcommittee of the House Committee on Appropriations considering the naval appropriation bill, Jan. 7, 1924, the testimony of Admiral Moffett, who has the corresponding position in the Navy of General Patrick in the Army:

> Mr. French. The next item covers the aircraft factory at Philadelphia, $1,500,000 as against $1,511,000 for 1923.
> Admiral Moffett. That is practically the same as last year * *.
> Mr. Taber. Do you do a great deal of manufacturing there?
> Admiral Moffett. We do as little as we possibly can; practically none now, except spare parts. It is practically manufacturing experimental types. We have no production there, practically, this year.
> Mr. Hardy. Do you build airplanes?
> Admiral Moffett. We have built them in the past. For instance, we have an experimental type and we will build, say, three of something that is entirely new, of our own design. Take the training plane. This last year we built two types of training planes. But it is almost entirely research, experimental construction, and repair.

"Exactly what the Dayton plant is doing. Absolute duplication. We have a complete plant at Philadelphia. I dare say we have some $10,000,000 buildings on it at this time. Here are the itemized estimates covering the $1,500,000 which we appropriated for the Philadelphia aircraft factory. They will give an idea of the extent of the work performed there.

"So here we have an example. The general commanding Army Air Service admits he does not know what the Navy is doing, and the Navy seemingly does not know or care what the Army proposes to do. The subcommittee of the House Committee on Appropriations in charge of naval appropriations is naturally interested in developing naval appropriations. They are not familiar with the details of the program of the Army aviation. The subcommittee in charge of Army appropriations does not know the details of what the naval subcommittee is doing, and we are spending millions upon millions of dollars.

Dayton and the Wright Brothers

"Dayton, of course, is particularly interested in Dayton. That is not our problem just now. We are responsible for the development of aviation in this country with the appropriation of the people's money, and should not be swept off our feet by the glamour and noise of real-estate promoters, contract seekers, and business men who have only their own local interests at stake.

"Dayton is advertising itself and I am opposed to it. The last place in the world that a memorial should be put up to the Wright brothers is in Dayton, Ohio. When the Wright brothers were struggling with their great invention, when they were hard up against it to finish the construction of their first machine, they got no help in Dayton, that now seeks to erect a memorial at the expense of the Government of the United States to 'their' Wright brothers. Dayton should erect a memorial to the Wright brothers at their own expense. They should dig deep in their pockets and erect a magnificent memorial to these great pioneers of the air as a constant daily reminder to every citizen of Dayton of the lack of cooperation, of the utter lack of support that they gave to their native sons in the days that help was needed. Why, gentlemen, you all know the history of the Wright brothers. After their first successful experiment at Kittyhawk how discouraged they became, how embarrased they were. Not until they went to Europe and demonstrated the actual success of heavier than air flying did they receive any assistance, moral or financial. It was the winning of some of the prizes of long standing in Europe that gave the Wright brothers their start. After their first flight, Dec. 17, 1903, they went to Europe; for several years they sought assistance and encouragement in Dayton, Ohio, and did not get it. They sold their European patent rights in Europe. It gave them the start. The first company was organized in New York City. The Dayton-Wright Co. was not the Wright Bros. Co. by any means. It was formed during the war by E. A. Deeds, whose name should not be mentioned in the same breath with the immortal name of the Wright brothers. So, for sentimental reasons, as far as I am concerned, Dayton has no right to make any demands on public funds.

Judging on Merit Alone

"I say again that the respective merits of the various locations throughout the country should be considered, not in this manner, first by one committee placing it in Philadelphia and another committee placing it in Dayton, but must be considered definitely until we are ready to consider this big subject comprehensively and thoroughly and ready to establish a definite policy for the Government and Congress to follow. We may continue for another year at McCook Field. Somebody will argue that McCook Field is not good. Perhaps it is true. That it is dangerous. The Government has had it there for many years. We have all our machinery there; we have all our equipment there; why, we have equipment and machinery and personnel enough to spend millions of dollars on experimental work each year. It can continue there just one more year. By that time I hope that the special committee of the House now investigating aviation will make its report. General Patrick has seen the light; he sees the necessity for uniting our aviation activities. I expected he would. He believed in it, I am certain, all of the time, but was in an embarrassing position. He could not publicly, perhaps, state something which he knew was diametrically opposed to the viewpoint of his superior officers. General

Patrick is an excellent soldier; has put his whole heart in aviation. I had the honor of serving under him when I was in the Army, and the courage he displayed in the testimony given by him a few days ago, which, perhaps, is not in accord with the "Army viewpoint," is commendable, and will, I am sure, inspire and encourage other officers to come out and speak for the best interests of their country, rather than for the best interest of their branch of the service.

"We are gradually coming to an understanding. The time is not distant and the conditions are such that we shall be compelled to decide this great problem. Therefore I urge that we make no hasty, unnecessary expenditures at this time. The experimental station of the Army now at McCook Field, as I have said before, has been going on for years. It was originally transferred there from Langley Field by Deeds. This matter was before the House before.

"My colleagues will remember that a similar proposition was before us the second session of the Sixty-sixth Congress. At that time we had three or four propositions very similar to this. One proposition for Selfridge Field, one for the field at Rantoul, Ill., another for the purchase of the Curtiss-Elmwood plant at Buffalo, and another for the purchase of a field at Dayton, Ohio.

"Gentlemen, with the same earnestness that I pleaded in 1919 I now plead to you, justified and backed as I am with the history of the Buffalo plant and what happened at Dayton, not to appropriate this money at this time, which means not only an appropriation of $500,000, but means an expenditure of nearly $10,000,000.

An Inopportune Expenditure

"I am urging a study of the question on its merits. I say it is very inopportune at this time to make the expenditure, because we are now all studying the question of a united Air Service. We have the McCook Field plant there now. It can continue for another year; and after we examine the whole question it will be up to us to decide whether we need this new plant at Dayton or not and what we should do in establishing a permanent engineering plant and an experimental station.

"I have the figures showing what has been accomplished at both plants. I say they have accomplished about as much work in each plant and have wasted about an equal amount at each plant with experiments that were not justified by past experience and by the engineering knowledge of the day. This is what I say to the gentleman from Ohio. Having at heart the interests of aviation, I want Congress to pause in appropriating money for buildings that we may not need; I want to stop some of these needless duplications, and I urge a study of this question in a comprehensive way. Then I am in favor of starting out judiciously and getting some coordination and efficiency out of the money appropriated."

Mr. Reid Gives New Cost Figures

"This," said Congressman Frank R. Reid, (Rep.) of Illinois, "is the real 'aircraft scandal' of which we have heard so much. In the past the charges have been of graft and industrial deficiency and concerned mainly the strictly war-time period ending June 30, 1919. Now we find that in the post-war period, or from July 1, 1919, to date, our aviation expenditures have actually been greater than during the war. I do not intimate graft, but I do intend to try to find out how this money has been spent, where it has gone, and what we have to show for it. Certainly it has not gone into the industry, which has long been in a state of collapse. Certainly it is not seen in the services themselves. To ascertain what is the trouble and then recommend means for correction is the aim of the inquiry, as I interpret it. The figures are official, having been prepared by the Army Air Service, and brought before the committee at my request. They include, not only the amounts specifically appropriated for air activities, but also sums obtained from other sources which do not appear on the surface and probably would not have been made public for some time had they not been dug out by this Committee."

Maj.-Gen. Mason M. Patrick, Chief of Air Service, was the principal witness. In response to questionings from Mr. Reid, General Patrick stated his conviction that the next war would be decided in the air; that it was the policy of the War Department to maintain only a frame work of aviation which could, in time of necessity, be expanded from commercial aviation and a civil aircraft industry; that existence of a civil aircraft industry was imperative, and that the War Department was endeavoring in every way to encourage the development of the industry and of commercial flying.

Mr. Reid then read into the proceedings the statement of post-war aviation expenditures, showing that, in the five years 1920-24, inclusive, the total for the War Department was $246,310,209.51; the total for the Navy Department, $177,923,898.39; the total for the Air Mail Service, $8,067,052.46; and the total for the National Advisory Committee for Aeronautics, $1,082,126.85. These sums include moneys obtained from funds other than those actually appropriated, including pay of personnel, etc., but all constituting a direct charge on the government for aviation.

Appropriations vs. Expenditures

"For five years—practically since the Armistice—Congress has been criticized for failure to appropriate enough money for aviation," said Mr. Reid. "The decline of the industry, the woeful state of our air defenses, and the prolonged delay in the appearance of commercial flying are continually laid at the door of Congress, until we, ourselves have almost begun to believe it is true. The War and Navy Departments each year have come to Congress and have asked for appropriations largely on the plea that commercial aviation and a civil aircraft industry are vital to our air defenses. But, here we are, with no commercial flying except the Air Mail, and with a fragment of an aircraft industry, yet confronted with the certainty that air transport in time of peace and air power in time of war, are the great potential factors in our life in the near future.

"While we are taking a national aviation inventory I am going to urge the Committee to follow through to its ultimate conclusion, the inquiry into the expenditure of these four hundred and thirty-three millions. It would seem that if commercial aviation is basic and imperative we ought to spend more on it and less, proportionately, on military establishments. Furthermore, where many agencies are spending money for aviation there is bound to be duplication and waste. It is like pouring water into a leaky barrel to continue to appropriate money for aviation without having first formulated and enacted a national air policy."

Following up his exposure that, in the five fiscal years, 1920-24, inclusive, the United States has spent on aviation a total of $433,383,287.21, Congressman Reid on Jan. 7, 1925, attacked as "the start of a new leak which would waste additional millions," the $500,000 item in the pending Army appropriation bill for the establishment of an enlarged Air Service experimental engineering plant at Dayton, Ohio.

At the same time, Congressman Reid, who is a member of the special House committee investigating aircraft, introduced at the desire of the Chiefs of both Army and Navy Air Services, an amendment to the Army appropriation bill which would legally empower both services to purchase aircraft, engines and instruments in the open market, with advertisement and without competitive bidding, which, according to Mr. Reid, "has reduced the essential aircraft industry to a condition approaching bankruptcy and has thus, through diminishing the source of supply, placed the air defense of the United States in grave peril.

The attack on the McCook Field enlargement, and the proposed change in methods of procurement, marked the first visible result of the special air investigation ordered by the House last spring and on which daily hearings are being held in an effort to evolve a national air policy out of the confusing situation which exists today. It marked, also, the opening of another effort on the part of the increasing numbers of Congressmen who feel that the way to save money and to get results, both in air power and in the encouragement of civilian aviation, is to unify or coordinate the score or more air activities for which Congress now provides money at the rate of $90,000,000 a year.

Quoting testimony given by Maj. Gen. Mason M. Patrick, Chief of Air Service, Mr. Reid placed the direct cost of the Army aviation experimental station in the last five years at $20,000,000. "Due to the fact that these engineers, who are

distinguished largely for their ceaseless tinkering with civilian designs, and for their failure to produce anything themselves, also control to a large extent the letting of experimental contracts, which constitute the bulk of business given out by the Army Air Service, I believe it is safe to say that possible 50 per cent of the nearly $250,000,000, which has been given the Air Service by Congress in the last five years, has been to all practical purposes waste."

Mr. Reid stated that General Patrick was "unable to tell the aircraft investigating committee a single notable thing the engineering division had produced, either aircraft or engines, in the last five years." While both the Army and Navy air service officers come each year to Congress for money, advancing as an argument the necessity to support and develop commercial aviation, they have been doing much to kill it, Mr. Reid asserted. Each has built up and maintained huge engineering and manufacturing plants. On Dec. 31, 1923, in the four Government stations, two Army and two Navy, at which design and manufacture or repair are carried on, there were employed a total of 3,832 civilians, of which 1,824 were at Dayton, Ohio, the site of Wilbur Wright and McCook Fields. On this same date, in all the civilian aircraft industry in the entire United States not more than 1,500 persons were employed. Yet it has been from the commercial industry, starved as it is, that has come every airplane and every airplane engine with which our many world aviation records were made, or in which such notable flights as that around the world were made."

The proposal to enlarge the Army engineering division, Mr. Reid said, had its genesis largely in Dayton and in "the ambitions of Army engineers to be aircraft designers and manufacturers." He called for a list of subscribers to the $400,000 fund which the people of Dayton raised for the purchase of land for a new station and which has been offered to the Government. "Should we not suspend this item," asked Mr. Reid, "until we are able to learn who is back of this project? It will be interesting to learn whether, among these subscribers, are found the names of persons, corporations or interests, which made money out of aircraft, in Dayton during the war, who expect to profit by it in the future as a "Dayton industry," or who hope to profit out of it as a real estate deal. "Mr. Reid quoted a Dayton aviation publication as declaring that for the $400,000 the people of Dayton invested, the big Army project would bring $10,000,000 in new construction and assure an annual payroll for 3000 to 5000 Dayton people up to $5,000,000 a year.

"It is this sort of thing that has made and is keeping us a sixth rate power in the air," declared Mr. Reid, "and has postponed from year to year the development of commercial aviation. I am opposed to this project for reasons of economy and public policy. I don't believe we should go on spending millions upon millions for military aviation, with little to show for it, when what we ought to be concerned with is putting airplanes to economic use, putting them to work, in other words, developing commercial aviation, which is the real basis of air power."

"U. S. a Sixth Rate Air Power"

"I am convinced," said Mr. Reid, "that no member of Congress, who is in favor of a unified air service, of national security, or of national economy, will vote for this McCook Field appropriation, opening the door, as it does, to increase waste in aircraft tinkering at Government plants without getting results."

Mr. Reid's amendment authorizing the departments to purchase aircraft without competitive bidding specifically limited such purchases to "commercial aircraft manufacturing corporations in this country, in which none of the stock is directly or indirectly held, owned or controlled by foreigners." The exception followed exposure in the House aircraft inquiry that the Army Air Service had given a $350,000 contract to the German aircraft builder A. H. G. Fokker, thus enabling him to set himself up in business in this country.

Mr. Reid said: "Ever since the armistice the War and Navy Departments have gone to Congress for money for equipment, always with the statement that it is necessary to build up a commercial aircraft industry.

"Instead of adopting, immediately after the armistice, a continuing policy of procurement, both army and navy services have permitted themselves to get into a condition whereby when it suits their convenience they insist on purchasing aircraft, through cut-throat competitive bidding, or if they desire to punish one manufacturer or favor another they can find excuses under the law, which permits buying proprietary designs or patented articles without competition, to allocate orders as they see fit.

"In the testimony of both General Patrick and Admiral Moffett, statements were made, first that it was the desire of the department to get away from competitive bidding, and that the assistance of the committee was requested to this end to amend the law, and second, that the rule of competitive bidding was not always followed.

"I am convinced that it is the desire of the departments to clear up this confusion and I am convinced that it is imperative for public policy to do so. Under existing Legislation: (U. S. Comp. Stat. 1916, 6869, U. S. 3721,) Purchase without Advertisements, the Navy Department is authorized to purchase in the open market without advertisements or competition, such items so essential to the national security, such as cheese, butter, tobacco and ordnance.

"What I propose to do is to give aircraft, which constitutes today the dominant arm, the same consideration as is accorded big guns that are obsolete and cheese, butter and tobacco."

Mr. Fitzgerald's Speech

After Mr. Reid had concluded his remarks Mr. Fitzgerald from Ohio defended the moving project. He said in part:

"The airplane was invented in Dayton on this very field which the people of Dayton have bought at great expense and given free to the Government as a memorial to her distinguished citizens Wilbur and Orville Wright. The airplane invented on this field and tested on this very field by the Wright brothers in 1904 found little interest on the part of the American people. The Wright brothers had to take it to France to find appreciation and reward for their conquest of the air.

"My friend says that nothing has been invented there. This is not an asylum for prospective inventors. It is a place for testing every legitimate idea that any man thinks he has tending to the advancement of aerial navigation. We have developed the super-charger, the ground inductor compass, the most accurate bombing sights, as well as engines and other parts. They have thrown out those things that are dangerous and selected those things that are safe.

"As to the attack on the Dayton people, they are as human as anyone else. The Wright brothers lived and worked there. The Dayton people were no more different than the people of the rest of America—all looked upon the Wright brothers as visionaries. The Dayton people are ashamed of it as well as all the American people should be ashamed of it.

"Now as to McCook Field. Five lives have been lost in landing or taking off from the field. It is dangerously small. The Dayton people were interested, naturally, in retaining it. It is advantageous in a commercial way. It was not established at Dayton as a matter of sentiment but because of the supply of mechanics there.

"The new field has 5000 acres of ground. This great new field, the largest in the world is sufficient for all purposes. Even bombing experiments. A great sheet of water should be impounded there from the Mad River if they wanted to test naval planes. I am one of those who believe in a united Air Service. I believe this place would be suitable in case that should occur. The Navy experiments as to their special needs. But this is the central research branch for both the Army and Navy. The Navy is independent and there is a certain amount of emulation and competition. However they exchange knowledge.

"The experts want $1,500,000 for this moving. The $500,000 is in keeping with the situation.

After a prolonged debate in which Representatives Anthony, Watkins, Johnson, Reid, LaGuardia and Fitzgerald took part the appropriation was passed as submitted.

Italy Organizing Air Line to the Near East

Establishment Terms for Flying Boat Service from Brindisi to Constantinople

The text of the concession covering an air line between Italy, Greece, and Turkey, which was approved by the Italian Cabinet on July 9, 1924 has finally been published. The substance of the agreement, as given in *Commerce Reports* of Dec. 29, 1924, is given below.

The State grants to the S. A. Aero Espresso Italiana, having offices at Rome and a capital of 1,000,000 lire, the right to establish and operate an air line between Italy, Greece, and Turkey, via Brindisi-Athens-Smyrna, or in the event of this proving impossible, via Brindisi-Athens-Salonica-Constantinople. The concession is for a term of ten years from the date of the inauguration of the service. Within three months after the date of the final concession, the company undertakes to raise its capital to 10,000,000 lire, two-thirds of which must be subscribed by Italian citizens. The chairman of the board, the managing director, and two-thirds of the members of the board of directors must be Italians resident either in Italy or abroad.

State Subsidies and State Priorities

The State obliges itself to pay a subsidy of 16.80 lire per kilometer of actual flying, it being calculated that the route Brindisi-Athens-Smyrna-Constantinople and the route Brindisi-Athens-Salonica-Constantinople are each 1,512 km. (937 mi.) long. This subsidy, to be paid in monthly installments, represents 60 per cent of the estimated total cost of operation, which on the basis of 315,000 km. flown annually, is counted as 28 lire per kilometer. During the first three years of operation the subsidy will be increased to 75 per cent of the cost, and correspondingly reduced to 45 per cent during the eighth, ninth, and tenth years, so that for the entire period of ten years, the subsidy paid will be at the average rate of 60 per cent of total cost.

The State has the right to free transportation of postal matter on the planes of the company leaving Brindisi twice a week, up to a weight of 5,000 kg. per annum. In addition, the State guarantees a minimum cargo of 10,000 kg. per annum, and will pay a lump sum of 1,000,000 lire in quarterly installments for each service. Weights carried in excess of the above will be paid at the tariff rates in effect. Such government matter at all times has absolute priority over everything else carried by the company's planes leaving Brindisi twice a week, and State officials shall have preference over all other passengers and shall pay 30 per cent less than the regular tariff.

The State will pay to the company the sum of 800,000 lire annually for maintaining the efficiency of its air fleet, it being understood that this implies that not less than 50 per cent of the fleet shall be ready to take the air with their respective crews when so ordered by the Commissioner for Aviation.

Frequency of Service

When justified by an increase in traffic, either party to the agreement may ask that the number of trips be increased from two per week to three or six per week, but in such case the subsidy will be reduced by 25 per cent for each kilometer flown over 315,000 and under 472,501 km., and by 45 per cent for every kilometer over 472,500 and under 945,001 km.

The company undertakes to complete its arrangements and to commence a biweekly service within twelve months of the signing of this agreement.

The company undertakes to employ on the line in question five planes having more than one motor each for a service twice a week, seven for a service three times a week, and not less than 12 for a daily service.

Landing Stations and Personnel

The government will cede to the company free of cost the land, water, buildings, and materials necessary at Brindisi for the protection of the machines during the life of the contract. Furthermore, the government will provide for the relief of damaged machines within the limits fixed by the International Convention of Paris, dated Oct. 13, 1919.

The company undertakes to obtain from the foreign governments interested the necessary permission to create landing stations, while the Italian government undertakes to support the company's request for the creation of such landing stations.

The personnel of the company employed at the central offices in Rome and at the seaplane station at Brindisi must be of Italian nationality. Foreigners will be permitted as employees only at the landing stations in Greece and Turkey.

Company Guaranty—Transfer Rights

The company, as guaranty of its fulfilment of the above obligations, will deposit the sum of 100,000 lire with the Cassa Depositi e Prestiti, which sum will be increased to 300,000 lire at the moment of its taking possession of the landing station at Brindisi. At the expiration of the agreement this deposit will be refunded, if the agreement has been scrupulously observed.

In the event of the company deciding to transfer the present concession to an Italian company of known standing, a request to this effect shall be addressed to the Commissioner for Aviation, who may refuse to permit such transfer without explaining the reason for such refusal.

Arguments in Favor of a United Air Force

Naval Reserve Flier Points Out Advantages of Consolidation

Editor, AVIATION:—

It has occurred to me that an argument for a United Air Force from a Navy man's viewpoint might be of interest to your readers. While I am only a reserve officer and a low one at that, I have given considerable thought and study to the subject, and, as during the late war I was operating with the Army service a good deal, I can claim to know something at least of their problems and requirements.

One of the chief difficulties about getting the Army and Navy to combine or rather give up their own air services is one of petty jealousy among the higher officers, but this can be easily overcome when gotten down to it. At present leaving these petty jealousies out of the question, there are two good reasons why there should be a United Air Force: First, that there would be little or no duplication of effort; second, that aerial tactics and the operation of aircraft in war are a study in themselves.

In order to get these two arguments over more clearly, I will state them in the form of an argument giving the pros and cons of both sides. First: There comes a duplication of effort. Being a Navy man I will state the Navy side first as to why they could not possibly use Army machines. They state that their machines have to be built to entirely different specifications than those of the Army because they are used for totally different purposes. They must be able to withstand the weather sitting on a turret with only a tarpaulin over the

engine for six months or more at a time; also, they must be strong enough to be catapulted which puts considerable strain on the undercarriage aside from the many other small details, such as feeding the gasoline to the engine while being accelerated from nothing to 60 mi./hr. in 40 ft. on the catapult.

Here we find one instance where the Army actually agrees with the Navy. They say that they never leave their machines out in the open and as they do not use a catapult, all this extra strength is unnecessary.

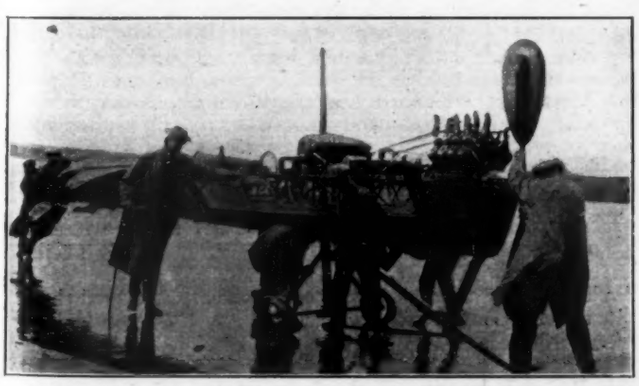
Now, let us look at both sides of this argument. Do machines suffer any in performance by being able to withstand weather and being strong enough to be catapulted? The only case where we can make actual comparison is in the case of a machine known as the VE7 and here the performance of the Navy job, if anything, is a little better than that of the Army. It is perhaps jumping to conclusions to say that with any one example that this is the case, so let us look at it from another standpoint. Will it hurt the Army machines to be able to withstand the weather? Certainly not. They will be all the better for it and the Army is just beginning to realize this, witness the around the world cruisers which were really developed by the Navy.

Now, as to the extra strength for the catapult, the same argument applies. It certainly does not hurt a machine any to be stronger, provided it does not seriously affect its performance. Has any thought been given, by the way, to the use of the catapult by the Army? There are several important uses that can be thought of offhand, such as being able to launch machines from concealed hangars, such as dugouts directly at the lines and not many miles from the front, as was the case during the late war. I know of a case where an old abandoned airdrome right at the front lines was used very effectively, for some time the pilots flew in and out the hangars so as to make it look as though it was still abandoned. This stunt was very useful because the airdrome was so close to the actual operations that there was no delay in communication. There would also be other uses, such as getting out of small fields, off the tops of buildings, for defence of cities, etc. in fact if one goes into it there are a great many other things that might turn up on occasions.

This sums up in a more or less general way some of the structural difficulties between the two branches. Any that I have omitted can be easily overcome if it really comes to a necessity so I am now going to take up a United Air Service from a personnel standpoint.

In the first place, as I have said before, Aerial warfare is a study in itself. The problems of attack and defence, bombing, etc. are so great as to warrant a separate training on a par with that of West Point or Annapolis. There are, of course, many difficulties in the way of such an institution, chiefly due to the fact that very few of our Army or Navy pilots saw much active service, particularly from the strategic and commanding end. However, the Army now has a school in Texas where aerial combat is being taught and this could be used as a nucleus.

At present a naval officer coming up for promotion has to take the same examination as a regular line officer in the Navy with aviation added, and when he gets any appreciative rank the aviation end requires that he be an aeronautical engineer. This same examination also applies to reserve officers and seems to me to be a little out of line. Of course the Navy argues that all officers on aviation duty are line officers in the Navy and as such should be able to take up at a moments notice duties applicable to their rank if they were not on aviation duty. They seem to think that they can pick an officer, give him flying training and aviation duty for four years then give him regular line duty for four years and expect him after that to still be an aviator.



P. & A. Photos

A survivor of the heroic age of aviation—the Antoinette monoplane on which Hubert Latham triumphed in many contests

Photo Kadel & Herbert

A flying pigeon coop used by Belgian racing pigeon fanciers to carry the birds to competitions

Aviation is too big a subject and is still improving and changing too rapidly for anyone not in constant touch with it to be able to be efficient in his duties, and an officer's line duties do not give him enough time to study up on aviation, let alone the fact that aviation is still a matter of actual doing and not studying.

It must be remembered also that many reserve officers in the late war performed their duties quite efficiently with only a short period of training and that anyone having sufficient intelligence to become an officer in any service should be able to adapt himself to conditions very quickly. In any case there would be more or less two branches of the Air Service; one working with the fleet and one with the Army and this should be taken into consideration in the training. The Marine Corps does not know much about handling ships, yet they work with and under the Navy.

The question of getting the Army and Navy to work with the Air Service is one that can only be worked out in time. I think the Army fully appreciates the usefulness of the Air Force and there would not be much trouble there, also some of the higher officers in the Navy are beginning to see light in this direction. Mr. C. G. Grey made a suggestion in your magazine a short time ago that he did not see why the Air Service should not run a Navy and after careful thought on this subject one will see that there are some possibilities of this suggestion. Why must a man necessarily be in the Navy to run a boat? There are lots of boats run by civilians.

The organization of an Independent Air Force is quite an undertaking and I am not going to discuss it now. Mr. Grey's article gives a very clear idea of the British organization, but it is probable that it would necessarily have to be changed somewhat for our use. The chart published in your paper seems to be fine, but in any case the important thing is to get an Independent Air Force, the organization can be worked out later.

Since writing this, the testimony of Secretary Wilbur and Admiral Moffett before the House Committee has been published and seems to bear out my views on Naval Officers' opinions. Their chief objection to the Air Force seems to be: First, that younger officers will get too rapid promotion; second, that to work with the Navy one must have naval training, and third, that in the late war aircraft performed only a minor part. They utterly disregard the fact that aviation is essentially a young man's game. They expect an aviation officer to be able to take line duty in his spare time and forget that the war ended six years ago.

U. S. Naval Reserve Pilot

New Mexican Airplanes

The National Aircraft Factory of Mexico recently produced to the designs of its chief engineer, Sr. D. Angel Lascurain y Osio several new types of military airplanes which have been successfully test-flown at Valbuena airdrome, the chief aircraft base of the Mexican air force.

These ships all follow the same principles of construction, although in detail they differ considerably from each other. They are strut braced monoplanes of clean lines, and while there is nothing revolutionary in their design, they are noteworthy for having been entirely built of Mexican materials, excepting the power plants. Outside of the fittings, the ships are entirely constructed of wood, including the covering of the fuselage and the wings, for which plywood is used.

The most remarkable of these ships is the "Quetzalcoatl" observation day bomber fitted with a 400 hp. Liberty engine, for which a high speed of 170 mi./hr., a landing speed of 50 mi./hr. and a ceiling of 24,750 ft. is claimed by our Mexican contemporary *Tohtli*. It is not known whether this performance was obtained with full load, but even so it is remarkable considering that Valbuena, where the ship was tested, lies 4900 ft. above sealevel. The ship has a wing area of 367 sq. ft. and weighs empty 2860 lb. The useful load being 1760 lb., in which 5 hr. fuel supply is included, the gross weight works out as 4620 lb.

A different model of this observation-day bomber, which has 10 sq. ft. less wing area and is equipped with a 185 hp. B.M.W. engine with supercharger, has a high speed of 120 mi./hr., a landing speed of 47 mi./hr. and a ceiling of 21,450 ft. The climb is given as 3300 ft. in 4 min. from a level of 6600 ft. The weight empty of the ship is 2490 lb., and the useful load 1364 lb., which gives a gross weight of 3854 lb.

Besides these two experimental service ships the National Aircraft Factory of Mexico has produced the "Mexico" a pursuit training monoplane, which has 280 sq. ft. wing area and is equipped with an 80 hp. Le Rhone engine. The weight empty is 1280 lb., the weight loaded 1760 lb., the high speed 75 mi./hr., and the ceiling 16,500 ft. Fuel for 2 hr. is carried on board.

A pursuit plane fitted with 160 hp. Gnome engine has also been produced. This ship is said to have a high speed of 140 mi./hr. and a landing speed of 46 mi./hr. The climb is given as 3300 ft. in 2 min. 36 sec. from a 6600 ft. level, and the ceiling as 19,800 ft. Fuel for 1½ hr. is carried on board. The weight empty is 1474 lb. and the weight loaded 1900 lb.

$100,000,000 Air Loan Fund

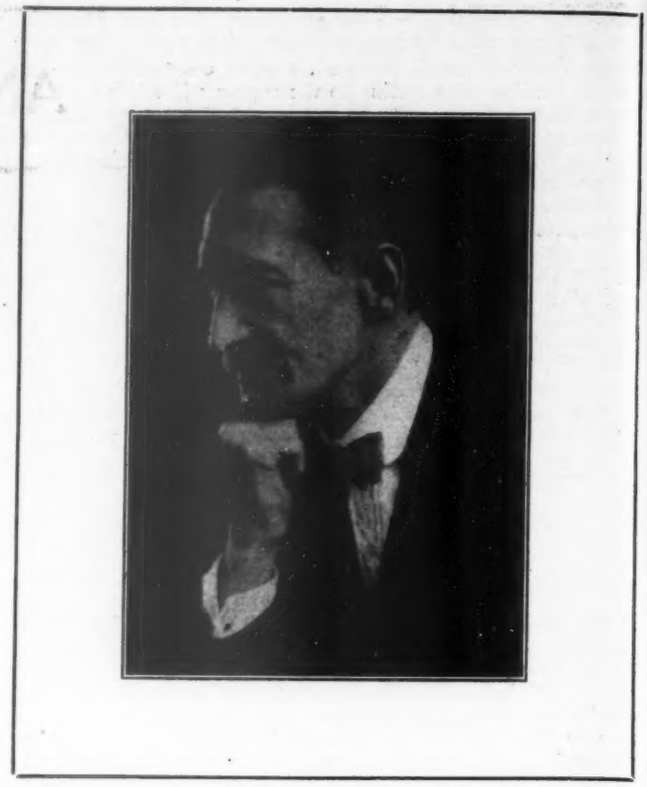
Fully cognizant of the impossibility of enacting legislation at the present time providing for government subsidies in any form, and realizing that something should be done immediately to encourage commercial aviation and to further the extension of existing commercial air lines, Congressman Clarence J. McLeod, of Michigan, recently introduced a bill in the House of Representatives directing the setting aside of a fund not to exceed $100,000,000 to be used as loans to responsible individuals and corporations desiring to enter the commercial flying field.

Mr. McLeod is of the opinion that his bill is not as liberal as it should be to place the United States on a basis with other nations in this field, but he believes that it is one that has a chance of passing the Senate and House. Aviation, particularly commercial aviation, is in its infancy in the United States. It is something new and it has to be "sold" to Congress and to the Nation.

Mr. McLeod believes that the passage of his bill will cause persons interested in commercial flying to enter into this new field, with government aid in the form of loans. He believes further that the result will be the operation of passenger and freight lines and that these lines, after a short period of years, will be on a self-sustaining as well as a paying basis.

When commercial aviation is properly "sold," when Congress and the nation are convinced that passenger and freight air lines are necessary and that they can be conducted at a profit to investors, then an awakened House and Senate, backed by an enlightened people, will enact bills which will greatly encourage larger ventures into this field, and it is hoped that in this connection Congress will see fit at some future date to pass a bill subsidizing commercial flying in the United States.

Mr. McLeod regards his bill as only an entering wedge to bring about the necessary legislation for the proper encouragement and development of commercial aviation.



Brig. Gen. Sir Christopher Thomson, former Air Minister for Great Britain, who is in this country on a lecture tour

British Air Mission in Roumania

A British aviation mission, under Vice-Admiral Bruckar, recently arrived in Bucharest. The Vice-Admiral, who is announced as the Under-Secretary for Aviation in the British Cabinet, is said to be organizing an aerial service between Great Britain and India, and Bucharest is expected to be an intermediate point on the main route.

The Vice-Admiral is scheduled to have conferences with the leading military authorities of the country, including Crown Prince Carol, and it is rumored that his advice will be sought in connection with the contemplated reorganization of the country's air service. It is significant that the Vice-Admiral is accompanied by representatives of the British airplane factories which have recently been negotiating with the Roumania government in regard to airplane contracts, notably the Armstrong, Whitworth and the Vickers companies.

A Strange Message

"There is an airplane broken down up in the air near my house and it can't move" was the unusual message received by a Boston newspaper office recently from a lady of that city.

The reporter assigned to this odd accident discovered that a plane, which afterwards proved to be a TG type training plane from the Naval Reserve Air Station at Squantum, near Boston, was bucking a strong wind of some 60 mi. velocity, and because of the force of the wind seemed to remain stationary in the air. The plane was over a church steeple, which appeared to be exerting a mysterious force on the plane, holding it suspended in the air above it.

AIRPORTS AND AIRWAYS

Philadelphia News

Philadelphia stepped definitely into the field of commercial aviation in December with the purchase of a forty-acre flying field on Roosevelt Boulevard by Harold F. Pitcairn, financier, head of Pitcairn Aviation, and member of the Aero Club of Pennsylvania. The new field, located twenty-five minutes from city hall by automobile, will be utilized as the terminal for inauguration of a passenger air transportation service on a very large scale.

With eight planes in readiness for instant service, Mr. Pitcairn announces that Pitcairn Aviation proposes to make flights for business, pleasure and emergency purposes from the Boulevard field to any available point on the North American continent. Week-end flights can be made to Atlantic City in forty minutes, and long-distance runs will be made upon appointment to points as far south as Mexico City and as far north as Canada. The new field will be operated in connection with the field recently established by Pitcairn Aviation at Bryn Athyn, Pa.

Mr. Pitcairn's statement announcing purchase of the field follows:

"For the first time in the city's history, Philadelphians will have at their command an emergency air service which will offer infinite possibilities for the saving of time and money. For example, an imperilled investment may demand the almost immediate presence of some Philadelphia financier in San Francisco, Pitcairn Aviation will undertake to transport him through the air to the Pacific coast as quickly as any plane can travel. Similar emergencies might demand the presence of certain Philadelphians in Mexico City, Montreal or Vancouver. Physicians and surgeons will be transported on appointment in emergency cases to any city in the country. Planes of Pitcairn Aviation will be available for the transportation of relief supplies to communities stricken by flood, famine, fire or pestilence; planes will be available for business trips, honeymoon trips and pleasure trips.

"Planes which will use the new boulevard field as a terminal, include two aircraft that can comfortably carry four passengers each with an extra compartment for baggage. The planes, eight in number are already housed in the hangars on the field of Pitcairn Aviation at Bryn Athyn, Pa.

"There are indications that America is on the verge of developments in air passenger transportation. The recently published report of Lieut. John P. Van Zandt of the U. S. Army Air Service is significant. He recently investigated the aviation situation in Europe for the War Department. His report pictured the Old World as criss-crossed with regularly established air routes, over which in 1924 50,000 passengers were transported on journeys covering points from Finland to Africa and from England to the Bosporus. Lieutenant Van Zandt, himself, traveled more than 6000 mi. by air over the European continent, gathering information on the development of commercial aviation in Europe."

Cleveland News

By Cy Caldwell

Under the auspices of the Cleveland Chapter of the N.A.A. an Aeronautic Exhibit is being arranged to give a high tone to the Cleveland Automobile Show, Jan. 17 to 25 of this year. The Airplane Industry will reciprocate by donating space for an Auto Exhibit in the Airplane Show of 1950. All but motor-cycle engine manufacturers will be welcome.

The Air Mail, the Goodyear Co., the Glenn L. Martin Co., Leece-Neville Co. and Floyd J. Logan are contributing exhibits of interest.

The exhibit is under the personal direction of Upson Downs the well known commercial pilot.

First Lieut. Frank B. Tyndall of the 6th Pursuit Squadron, Hawaii, was a visitor at the Glenn L. Martin Plant during an aerial inspection trip to familiarize himself with progress in aircraft manufacturing and tactical and maintenance work at various fields.

From Washington, Lieut. Tyndall flew to Langley Field, Middletown, Pa., Garden City, Boston, Hazelhurst, Lakehurst, Philadelphia, Aberdeen, Md., Moundsville, Dayton, Detroit, Bryan, Rantoul, Belleville, Kansas City, Muskogee, Okla., Dallas, San Antonio, St. Louis and Cleveland, and returned to Washington.

Col. Frank Searle Arrives

Col. Frank Searle, managing director of Imperial Airways, Ltd., arrived in New York last week from London. His trip is said to be in connection with the development of certain plans for the establishment of new commercial aviation projects in this country.

When asked whether he expected to give attention to the possibilities of commercial flying in Canada, Colonel Searle said he believed the opportunities were better in this country, although the network of railroads with fast train service in the Eastern sections of the country make it impossible to compete successfully with airplanes. He indicated some good paying routes might be established west of Chicago or in the vicinity of the Great Lakes.

"Unless aviation can be run on a paying basis it cannot be developed properly," said Colonel Searle. "If you are going to rely on subsidies, then commercial aviation in this country is done for. What is needed is a machine which one can be sure will be self-supporting. Our company has orders out for new machines of a type which we know will be self-supporting. We will get the first of these in about six months. This type of airplane will have three engines, so that one can always be held in reserve for emergency use. These machines will be capable of carrying a paying load of 4,500 lb. and can make jumps of 400 mi. as a regular thing.

"On the other side we probably have more opportunities for successful operation of air routes, because railroad trains, outside of those in England, are slower; but there are the same difficulties over there in the way of Government operation. Our own service is on a strictly business basis. We have a board of directors composed of business men and they require us to show a balance on the right side of the ledger.

"The Imperial Airways' service gets an average of about five hours per day per machine. Operating ten machines we averaged 150,000 mi. per month last year. Our company has services from London to Berlin; London to Ostend; London to Brussels and Cologne; London to Paris and Zurich.

"The planes we are running between London and Paris have room for sixteen passengers, and the planes come and go with the regularity of clockwork. We are now making arrangements to establish a new service between Suez and Karachi, India, which will save six days in the delivery of mail to India, as compared with the present steamship service. The mail will be conveyed to Suez by the regular mail and steamship lines. The saving we could make on this first leg of the journey does not warrant our trying to compete at present, but on the other end we can make a real saving. Conditions there, too, are ideal for flying.

"About sixty-five tons of first class mail go out to India once a week, or enough to load half a dozen airplanes six times a week, so that we have the volume of business and a real opportunity to cut down running time under ideal flying conditions. This is the important point to be considered in all flying projects: How many passengers or how much mail or light freight is to be carried and how much can be charged. A little figuring will show whether the project is worth while or not."

UNITED STATES AIR FORCES

U. S. ARMY AIR SERVICE

Wilbur Wright Field News

Lieut. G. E. Ballard, who was connected with Wilbur Wright Field and with the Repair Depot at Indianapolis, Ind., before it was consolidated with Wilbur Wright Field, left on Nov. 14 for his new station at Middletown, Pa. Lieut. Ballard has served as Chief Inspector during most of this time and took part in many notable flights. Lieutenant Ballard's place as Chief Inspector has been taken by Lieut. H. A. Bartron, who in turn has been succeeded by Lieut. Carl F. Greene as Station Supply Officer.

Lieut. C. E. Thomas, Jr., is now in charge of the Material Section at Field Service Section, during the absence of Lieut. G. V. Pike on the Pacific Coast. Lieutenant Thomas's place as Depot Supply Officer has been taken by Lieut. S. G. Frierson.

On Nov. 15, Lieut. C. E. Thomas, Jr., flew to Columbus, returning later in the day.

Lieut. E. P. Gaines left by air on Nov. 16 for Bolling Field, en route to Fort Bragg, N. C.

Lieuts. H. H. Mills and S. G. Frierson proceeded by air to Chicago several days ago on a cross country trip and were held up by storms and snow at their destination. They returned to this Field on Nov. 18.

Lieut. J. E. Parker of Schoen Field made a brief visit to Wilbur Wright Field returning by air on Nov. 16.

Maj. A. W. Robins was appointed Commanding Officer of the Area purchased by the citizens of Dayton and donated to the United States to be used as the site of the future McCook Field. It adjoins the present site of Wilbur Wright Field and for that reason Major Robins was placed in charge.

Chanute Field News

Five students (three from Mitchel Field, one from Bolling Field and one from Langley Field) arrived by air to enter the Air Service Technical School during the preceding week.

During a recent week end cross-country trip to the points designated were made by the following student officers of the Air Service Technical School: 2nd Lieut. John M. Weikert with Corporal Branch, in a JN4H, to Schoen Field, Indianapolis, Ind., and return; 2nd Lieut. Robert B. Williams with Lieut. John G. Salsman, in a JN4H, to Scott Field, Ill., and return; 2nd Lieut. Joseph H. Hicks, with 2nd Lieut. John W. Warren to South Bend, Ind., and return; 2nd Lieut. Stewart W. Towle, with Private Robbins, in a DH4B, to Clinton, Iowa, and return; 1st Lieut. Charles Backes, with Sergeant Lingenfelter, in a DH4B, to Minneapolis, Minn., and return; 2nd Lieut. Herbert K. Baisley, with 2nd Lieut. Gilbert Waller, A.S.O.R.C., in a DH4B, to Mt. Clemens, Mich., and return.

Transporting Supplies Via Airplane

During the months of September, October and November, shipments made by air from the A. S. Supply Depot at Middletown, Pa., amounted to 3,579 lb. These shipments consisted of airplane spare parts and clothing and were consigned to various Air Service fields. The planes in which they were transported were DH4B's and Martin Bombers.

These supplies are, of course, only a fraction of the amount transported from this Depot. It should be stated also that no planes are sent to Middletown for the express purpose of securing supplies, but whenever a pilot makes a cross-country training flight and stops at Middletown en route, if there happens to be a shipment consigned to the particular station for which he is bound and there is room in the airplane, the pilot assumes the role of a freight carrier and receives a shipping ticket, which he has receipted at destination and returns to the Depot.

Luke Field (P. I.) News

First Lieut. Ray. A. Dunn, who has functioned as post and group adjutant and commanding officer of Group Headquarters Detachment, was transferred from his post at H.Q. to assume the duties of post quartermaster, vice Capt. Alexander C. Doyle, Q.M.C., who returns to the Mainland on the next transport, account expiration tour of foreign service.

Succeeding Lieutenant Dunn rises First Lieut. Richard H. Magee, from his post as Personnel Adjutant, to that of Post and Group Adjutant, and C. O. of Group H. Q. Det.

Scott Field News

Maj. Frank M. Kennedy was the recent guest of friends at Scott Field and Belleville. He was the guest of honor at a public reception given by the Belleville Chamber of Commerce and the Rotary Club on Nov. 24. Major Kennedy also lectured to the Air Service Balloon and Airship School during his stay at Scott Field.

Lieut. Col. John A. Paegelow, A.S., was the guest of honor at a luncheon given by the St. Louis Chamber of Commerce on Dec. 3.

Col. Graham Assumes Command of Rockwell Depot

Lieut. Col. Harry Graham, A. S. took over the command of the Rockwell Air Intermediate Depot on Thanksgiving Day, relieving Maj. S. W. Fitzgerald who was on temporary duty at the Depot since the departure of Maj. H. H. Arnold.

Maj. Fitzgerald, upon being relieved of his duties at Rockwell, returned to his proper station at San Antonio, Tex. by air, piloting a newly overhauled DeHaviland.

Camp Nichols (P.I.) News

First Lieut. Earle G. Harper proposes to take a trip to Legaspi to look over a proposed landing field there. The municipal government has offered one and if it can be made into a suitable field this will afford us a trip there at least twice a month.

Capt. Rosenham Beam was making preparations in November to look over a landing field at Taclobam, Leyete.

Air Marshal Sir John Salmond, who has been appointed to the command of the Air Defense of Great Britain

20th Bombardment Squadron

Lieutenant Rodgers flew a Martin Bomber for 2 hr. 30 min. recently at an altitude of 5000 ft. for the purpose of aiding Fort Monroe A.A. Batteries in testing out a new sound detector machine.

Air Service Tactical School

The Air Service Tactical School has seven DH4B, eight SE5, three MB3 and one Martin Bomber in commision. These airplanes are flown every day by student officers.

U. S. NAVAL AVIATION

Los Angeles in New Test

The airship Los Angeles made another successful flight on Dec. 30 to continue tests of the water-recovery system installed since her arrival here from Germany.

For three hours the airship sailed over the shore towns from Barnegat to Asbury Park. When she headed for the hangar again and reached the air field she experienced difficulty in making fast. At the third attempt the ground crew were able to get hold of ropes thrown from the ship. The reason for this difficulty, officers explained later, was that the air 1,000 ft. up was fourteen degrees warmer than the ground temperature.

Comdr. J. H. Klein, Jr., who was in command during the flight, said that the water-recovery system worked well.

Extensive Airship Operations Planned

Extensive airship operations will be undertaken with the Navy's two rigid airships, the Shenandoah and the Los Angeles, together with the airship tender Patoka, during the first six months of this year.

The purpose of these operations, as far as the Shenandoah is concerned, will be to test her usefulness as a Naval scout, and to train the personnel in the operation of the airship, operating from the Naval Air Station, Lakehurst, N. J. and with the surface ships. The value of the Patoka, the airship tender equipped with a mooring mast, as a means of providing a mobile sea-going airship base will be fully determined.

The Los Angeles, designed as a commercial air liner, will be operated by the Navy over long distances and for extended periods as a means of showing to the American people the value of the rigid airship as a commercial carrier and demonstrating the reliability of her service.

The Los Angeles is scheduled to make mooring tests with the Patoka in Chesapeake Bay during the first three weeks of this month, together with demonstration and training flights in the vicinity of the Naval Air Station, Lakehurst, the home port of both airships. On Jan. 25 a total eclipse of the sun will take place, visible on the Atlantic Coast. In order to obtain photographs of this rare natural phenomena at the most advantageous position, the airship Los Angeles will make a flight during the eclipse, carrying scientists, cameras and instruments, and will ascend to some 8,000 ft. altitude to make possible the taking of observations and photographs above the clouds. Demonstration flights will be continued with the Los Angeles until Feb. 10, when the airship will undergo a five days' minor overhaul.

Due to a shortage in helium, the Shenandoah will not be inflated until the latter part of February. By this time it is expected that the Helium Production plant at Fort Worth, Tex., will have delivered enough helium for both airships. The shortage was caused by a slowing up of production at Fort Worth, due to cold weather. Commencing the first part of March, the Shenandoah will engage in a series of test flights, preparatory to operating with the vessels of the Fleet in the Caribbean, from March 22 to April 7. The airship tender, Patoka, will proceed to the Panama Canal after the Shenandoah has returned to Lakehurst, by April 8.

About Feb. 16, after the minor overhaul period of five days, the Los Angeles will commence a series of long distance flights from Lakehurst. Bermuda will be visited by the airship during the period Feb. 16 to 26, followed by a flight to San Juan, Porto Rico, during the period March 3 to 17. While the Shenandoah is in Southern Waters during the latter part of March, the Los Angeles will make flights in the vicinity of Lakehurst, followed on April 8 to May 10 by flights from Lakehurst to the Panama Canal. The Patoka will be present at Bermuda, San Juan and the Canal Zone to receive the Los Angeles.

From May 11 to 19 there is scheduled an overhaul period for both airships, to be followed by a flight by the Los Angeles to Honolulu, T. H. during the period May 20 to June 20. A trans-Atlantic flight is proposed as an alternative to this. The use of the Los Angeles in a flight from this country to England, as a demonstration of the practicability of airship mail service across the Atlantic has been considered, and it is possible that a flight of this nature will be substituted for the flight to Hawaii, if the experience gained shows that this can be done with helium.

While the Los Angeles is engaged in her long distance flight, either to Hawaii or England, the Shenandoah will continue her operations from Lakehurst, including operations with the Patoka in Chesapeake Bay, which will be continued until the end of June. During the last ten days of June the Los Angeles will undergo a thorough overhaul.

Naval Air Orders

Lieut. Harvey R. Bowes, det. Aircraft Squad, Scouting Flt; to U.S.S. Milwaukee.

Lt. (jg) Harold J. McNulty, det. U.S.S. Milwaukee; to Aircraft Squads, Setg. Flt. involving flying.

Lt. Comdr. John B. Ewald (SC), det. Naval Air Station, Lakehurst, N. J.; to Asiatic Station.

Gun. Glen G. Gibson, det. Rec. Ship, San Fran, Cal; to U.S.S. Langley.

Lt. Comdr. Paul Cassard, det. Bu. of Aero., Navy Dept; to executive officer, Naval Air Sta., N.O.B., Hampton Rds., Va.

Lt. Comdr. John C. Cunningham, det. Naval Observatory, Wash. D.C.; to executive officer, U.S.S. Henderson.

Lt. (jg) Earl R. DeLong, det. U.S.S. Detroit; to Aircraft Sqd. Setg. Flt. involving flying.

Lt. (jg) Edward A. Mahor, det. Aircraft Sqds, Setg. Flt; Resignation accepted 23 Jan. 1925.

Lieut. Robert H. Fladeland, (DC), det. Naval Academy, Annapolis, Md; to U.S.S. Shawmut.

Lieut. Dayton Fisher (SC), det. U.S.S. Patoka; to Rec. Ship, Phila. Pa.

Lieut. James B. Sykes, det. command U.S.S. R27; to temp duty under instr. in aviation Naval Air Station, Pensacola, Fla.

Lt. (jg) John P. Heath, det. U.S.S. New York; to temp. duty under instr. in aviation, Naval Air Station, Pensacola, Fla.

Lt. (jg) John G. Jones, det. U.S.S. Trenton; to temp. duty under instr. in aviation, Naval Air Station, Pensacola, Fla.

Lt. (jg) Michael H. Kernodle, det. Edgewood Arsenal, Edgewood, Md; to temp duty under instr. in aviation, Naval Air Station, Pensacola, Fla.

Lt. (jg) John B. Mallard, det. U.S.S. Charles Ausburn; to temp duty under instr. in aviation, Naval Air Station, Pensacola, Fla.

Lt. (jg) George W. Mead, det. U.S.S. Trenton; to temp duty under instr. in aviation, Naval Air Station, Pensacola, Fla.

Lt. (jg) Timothy J. O'Brien, det. U.S.S. Arkansas; to temp duty under instr. in aviation, Naval Air Station, Pensacola, Fla.

Ens. William P. David, det. U.S.S. James K. Paulding; to temp duty, Naval Air Station, Pensacola, Fla.

Ens. Howard B. Hutchinson, det. U.S.S. Maury; to temp. duty under instr. Naval Air Station, Pensacola, Fla.

Ens. Roland P. Kauffman, det. U.S.S. Cincinnati; to instr. in aviation, Naval Air Station, Pensacola, Fla.

Ens. Alan R. Nash, det. U.S.S. Putnam; to temp duty under instr. in aviation, Naval Air Sta., Pensacola, Fla.

Ens. Addis D. Nelson, det. U.S.S. Barry; to temp duty under instr. in aviation, Naval Air Sta., Pensacola, Fla.

Where to Fly

CALIFORNIA
THE RYAN SCHOOL OF AVIATION
O. B. STAR ROUTE SAN DIEGO
Ideal flying weather all Seasons. Very best of planes and instructors. Opportunity to study latest planes and construction.
A few recommended students will be given employment in our shops, while learning to fly.

CALIFORNIA
VARNEY FLYING SCHOOL
Established since 1914
SAN MATEO SAN FRANCISCO

ILLINOIS
HEATH AIRPLANE COMPANY, Inc.
Oldest aeronautic establishment in U. S.
Airplane Supplies Flying School
2856 Broadway Chicago

ILLINOIS
PARTRIDGE, Inc.
Aeronautical Instruction
Aero Club of Illinois Field. Chicago, Ill. *Write for Booklet*
Mail Address-- 430 S. Michigan Ave.

ILLINOIS
FLY THEM YOURSELF
Flying instructions by the hour. Ex Air Mail Pilots as instructors. All size ships and motors. All year flying.
YACKEY AIRCRAFT COMPANY
Flying Field, Checkerboard Field, Maywood, Illinois
Telephone Maywood 1963 (Suburb of Chicago)

ILLINOIS
MID-WEST AIRWAYS CORP.
MONMOUTH, ILL.
One of the four best fields in America
Thorough Flying Instruction Course by experts at lowest rate.
Passenger Flights to Points Near or Far

KANSAS
AVIATION ENGINEERING CO.
Single and 2 Seater
LIGHT PLANES
Parts, Instruction, Blueprints $2-$5, Propellors $10.
Circular Free LAWRENCE, KANSAS

MARYLAND
THE SKYSYNE CORPORATION
NIGHT & DAY AERIAL ADVERTISING
OFFICE 711 Keyser Bldg. Baltimore
Get our prices FIRST 3 Planes at your order
AIRDROME Logan Field Dundalk, Md.

MISSOURI
NICHOLAS-BEAZLEY AIRPLANE CO.
Standard J-1's in carload lots or flyaways, Jennies, Canucks, Motors, Supplies, Parts. *Everything for the Aviator.*
MARSHALL, MO.

MISSOURI
ROBERTSON AIRCRAFT CORPORATION
Airplanes Motors, Parts, Supplies; Shops and Hangars
ST. LOUIS FLYING FIELD
ANGLUM, MO.

NEW JERSEY
CHAMBERLIN-ROWE AIRCRAFT CORP.
Aerial Advertising, Photography, Passenger Carrying, and Flight Training
New York Air Terminal Hasbrouck Heights, N. J.

NEW YORK
CURTISS EXHIBITION COMPANY, GARDEN CITY, N. Y.
Flying Fields—Garden City, Buffalo, N. Y.; Dallas, Tex.; Miami, Fla. Complete flying service including schools, aerial photography, passenger and fast cross country transportation to any point. Air fleet of thirty machines.
Big reduction in rates for flying instruction. Write for information.

NEW YORK
PORT WASHINGTON, LONG ISLAND
FLYING BOAT SCHOOL Clifford Webster—Instructor
Winter Station Jan. 1-May 1 Palm Beach, Fla.
Curtiss Metropolitan Airplane Co., Inc.

OHIO
AKRON-CLEVELAND
Flying School for students in Aviation. "Pay as you Learn."
Modern WACO Plane with high-lift wings.
Passenger Rides Advertising Photography
STOW AVIATION FIELD
Stop 53 Akron-Kent-Ravenna Car line, Rt. 1, Cuyahoga Falls, Ohio.
Hangars Supplies 6 mi. northeast of Akron.

OHIO
DAYTON, OHIO
Supplies, Hangars, Shops and Field 1 Mile from Dayton limits.
JOHNSON AIRPLANE & SUPPLY CO.

PENNSYLVANIA
ESSINGTON SCHOOL OF AVIATION
Established 1915 Frank Mills, pilot
FLYING BOATS, SEAPLANES, AND SPARES
ESSINGTON (just west of Philadelphia), PA.

PENNSYLVANIA
CAN YOU FLY
If you can't and want to learn, write us. We have an opportunity for you which you can't afford to pass up. Write today.
GREAT LAKES AIRWAYS INC. ERIE, PENNA.
Complete Aero Service:—Parts and supplies of all kinds. Get our prices first—24 hour service.

PITCAIRN AVIATION
LAND TITLE BUILDING PHILADELPHIA
FLYING FIELD AT BRYN ATHYN PENNSYLVANIA
COMMERCIAL FLYING INSTRUCTIONS SHORT FLIGHTS

TEXAS Year-round Flying
SAN ANTONIO AVIATION & MOTOR SCHOOL
Expert instruction in flying and mechanics
Free sleeping quarters at Airdrome
AIRPLANES, ENGINES, PARTS, SUPPLIES, SHOPS, HANGARS, OX5s, Hissos, Liberties, Jennies, Canucks, Standards
Large stocks on hand, prompt shipment, best values
Office 509 Navarro Street San Antonio, Texas

U. S. NAVAL AVIATION

(Continued)

Ens. Leo P. Pawlikowski, det. Off. Naval Comm. Navy Dept; to temp duty, Naval Air Station, Pensacola, Fla.

Lieut. Claude A. Angonnet (DC),— det. U.S.S. Aroostook; to Aircraft Sqds., Battle Flt.

Lieut. Adolphus W. Gorton, det. U.S.S. Langley; to Aircraft Sqd., Battle Flt., involving flying.

Lieut. Jackson R. Tate, det. U.S.S. Langley; to Aircraft Sqd. Battle Flt. involving flying.

Ch. Carp. Alfred R. Hughes, det. U.S.S. Wright; to Naval Air Sta., San Diego, Cal.

Ch. Carp. Roy R. Wells, det. Naval Air Station, San Diego, Calif.; to U.S.S. Wright.

Pay Clerk Sebastian A. Biehn, det. U.S.S. Aroostook; to Naval Air Station, Pearl Harbor, T. H.

Lt. (jg) Maurice E. Curts, det. Naval Air Station, Pensacola, Fla.; to U.S.S. Goff.

Lieut. William J. Dean (SC), det. VO Squadron Six, Aircraft Sqd. Sctg. Flt.; to Scouting Plane Sqd. One.

Publisher's News Letter

About this time of the year, letters are usually received inquiring why so much space is devoted to governmental aviation. Some of our readers seem to have little interest in the affairs in Washington and would rather see AVIATION give more space to general aviation subjects. To these, we can only say that from the viewpoint of the general advancement of all things aeronautical, the center of hope is in Washington. Lamentable as this may be, it is a fact, and as such must be given, in the columns of AVIATION, the importance it deserves. Some brighter day it is hoped by all that commercial aviation will develop to such a degree that it will dominate all other air activities, but just now the hope of aeronautical development is centered in the policy of the government.

* * * *

If space were available, it would be helpful if we could follow all the channels in Washington. Commencing with the President, we then have the Budget Bureau's recommendations to consider, then the Appropriations Committees of both the House and the Senate, the Winslow Bill hearings, the Curry Bill, the Lampert Committee that is investigating air service matters, the annual reports of the Air Services, and other special news that "breaks" almost daily. As will be noticed, it is difficult to cover all these matters fully, but we do feel that we must keep our readers informed as to the developments as they affect the broader phases of aeronautics. This is written more in anticipation than in reply, based on experiences of other years.

* * * *

If anyone thinks that Washington is not the center of things aeronautical at this time, he should talk with the line of air people that pass our point on the reviewing line. The short session of Congress is so crowded with aviation matters which vitally affect everyone in the field that we are perhaps unduly concerned with the possibilities. Commercial aviation, the pilots, the flying fields, the aircraft industry, the Air Mail, the naval and military Air Services are all affected by pending legislation. What will come of it all is problematical. Something will be done, but how much depends on the press of business in the session. For these reasons we intend to turn our attention to Washington as closely as possible, not forgetting however that what our readers really want is interpretative rather than detailed accounts.

* * * *

Once more may we say a word or two regarding the advisability of receiving AVIATION by subscription rather than by news stand purchase. For the last two months there have been numerous calls for AVIATION from those who could not purchase copies at their nearby newstand because of the issue being sold out. We cannot fill some of these orders owing to the demand in certain quarters for all the extra copies on hand. We cannot carry large stocks of back numbers on hand, and we therefore make the friendly suggestion that those of our readers that do not wish to miss any future issues make arrangements to receive them by subscription.

* * * *

President Coolidge has indicated that agitation of the public at a time when appropriations are being considered does not meet with his approval. He particularly referred to the statements that have recently been made regarding the 5-5-3 sea power ratio and the use of the Japanese military and naval development to stimulate Congressional action on appropriations. With this new policy everyone should agree, particularly those interested in aeronautical progress. Everyone knows that we could not defend the Philippines by naval action owing to our lack of suitable bases in the Pacific. The only practical defense is military and aerial. The use of this so-called "peril" to inflame the public mind is not the proper way to secure large appropriations.

* * * *

While on this subject it may be said that AVIATION considers itself to a considerable extent a forum for the presentation and discussion of ideas pertaining to aeronautics. Often articles and statements, appearing under the name of some contributor, contain general views in which the writers firmly believe and which we publish as expressing interesting points of view from people of standing, but which are not in the least the editorial views of AVIATION. Such in particular, is the case regarding the views expressed by our esteemed fellow editor, C. G. Grey of *The Aeroplane* when he spoke about the Japanese in our issue of Dec. 15, 1924. We can only say that his views on this subject are not our views. We believe, and believe strongly, that friendly relations can be maintained between Japan and the United States to the great mutual benefit of both countries. We feel that there is every reason for cooperation between Japan and America, and we hope that our numerous Japanese friends and readers will not take Mr. Grey's article as an expression of our own editorial views.—L.D.G.

Take Advantage of This Offer

Five Dollars Worth for $4.00

We have left from an edition of 5,000 a few copies of **WHO'S WHO IN AMERICAN AERONAUTICS**. To clear our shelves and make way for the new edition of **WHO'S WHO** which is now in preparation, we will mail, postpaid as long as the supply lasts, a copy of this valuable reference book

Free with each new subscription to AVIATION

(at $4.00 in the U. S., Canada and Mexico $5.00, other foreign $6.00)

received before March 1, 1925.

While this offer lasts you may secure **AVIATION** for a year (52 issues) at the regular subscription rate and **WHO'S WHO IN AMERICAN AERONAUTICS,** (the regular price of which to everyone has been $1.00) for the cost of a subscription alone.

Who's Who contains nearly a thousand biographies of those prominent in American Aeronautics, hundreds of photographs, valuable statistical information, organization and directory of the Army Air Service, Bureau of Aeronautics, Navy Department, Air Mail Service and other important organizations.

AVIATION is the only American publication which gives each week a review of the important news of aeronautics throughout the world; photographs and descriptions of the latest machines and independent editorial expression on the problems and progress of flying in the United States.

You need AVIATION to keep in touch with big new developments this year, and you will find WHO'S WHO a valuable supplement to your reading.

This is an offer of genuine value but it is limited to only about 100 new subscribers.

So Send In The Coupon Now

GARDNER PUBLISHING CO.
225 FOURTH AVENUE, NEW YORK.

For the enclosed dollars ($4.00 in U. S., $5.00 in Mexico and Canada, other foreign, $6.00) send me postpaid a copy of Who's Who in American Aeronautics and the next 52 issues of AVIATION, in accordance with your special offer.

INDEX TO ADVERTISERS

A

Aircraft Service Directory..... 89 - 90
Angle, Glenn D..... 90

B

Boeing Airplane Co..... 66
Bristol Aeroplane Co., Ltd..... 91

C

Champion Spark Plug Co..... 90
Classified Advertising..... 90
Columbia Aircraft Corporation..... 89
Curtiss Aeroplane & Motor Co..... 68

E

Ericson, F. G..... 89

H

Hamilton Aero Mfg. Co..... 90
Hartney, Harold Evans..... 89
Huff Daland Aero Corp..... 89

I

Ireland, G. S..... 89

J

Johnson Airplane & Supply Co..... 88
Johnson Motor Products Co..... 90

L

Lamblin, Etablissements..... 88
Ludington Exhibition Co., Inc..... 89

M

Martin, The Glenn L., Co..... 87

N

New York University..... 89
Northrop, Marvin A..... 89

P

Pioneer Instrument Co..... 89

R

Roza, Art..... 90

S

San Antonio Airways, Inc..... 89
Sellers, Matthew B..... 89
Swallow Airplane Mfg. Co..... 88

T

Titanine, Inc..... 88

W

Warner, Edward P..... 90
Where to Fly..... 84
Wood Elastic Web Co., J. W..... 88
Wright Aeronautical Corp..... 92

Y

Yackey Aircraft Co..... 89

A Triumph of Endurance

ON Friday, October 3rd, seven Army planes raced at Dayton, Ohio. The race was won by a Martin Bomber more than six years old. Before it came to the racing field this Martin Bomber had traveled over 350,000 air miles—more than 14 times the distance around the world.

This same plane was the winner in the same event last year and scored second place in the Detroit race the year before last. This is a remarkable record for dependability.

To those interested in the future possibilities of the commercial plane we shall be glad to supply detailed information concerning Martin planes showing how this unrivaled dependability has been achieved.

THE GLENN L. MARTIN COMPANY
CLEVELAND, OHIO

Builders of Quality Aircraft since 1909

Airplanes

That you can use now and make money with

Curtiss JN4D in original crate	$1300.00
Curtiss JN4D used excellent condition	800.00
Curtiss 3 pass. semi-cabin OX5 motor used one season	850.00
Curtiss 3 pass. semi-cabin OXX6 motor 3000 feet in 10 min. with full load guaranteed	1650.00
Curtiss Canuck used; excellent condition, all upper wings	900.00

These planes are priced for immediate sale and are subject to change in price without notice. A 25% deposit will hold any of these planes 30 days. These planes can be inspected at our Dayton Field.

JOHNSON AIRPLANE & SUPPLY CO.

DAYTON, OHIO

Largest Dealers in Aeronautical Equipment in the Country. Write for our Latest Issue of Special Price Lists Stating What You Are Chiefly Interested In.

THE OUTSTANDING PERFORMANCE OF

THE NEW SWALLOW

(Reg. U. S. Pat. Off.)

in the Speed and Efficiency Events for Commercial Planes at the recent National Air Meets at Dayton and Wichita offers

CONVINCING EVIDENCE OF ITS SUPERIORITY

HIGH PAY LOAD — EASE OF CONTROL
LOW MAINTENANCE COST — SIMPLICITY
RUGGEDNESS — ACCESSIBILITY

Speed Range Never Before Attained in a 3-Place OX5 Airplane

$3,500 at Wichita

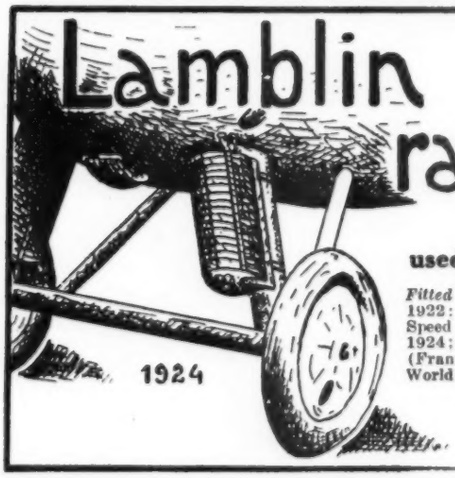
Write for Additional Information

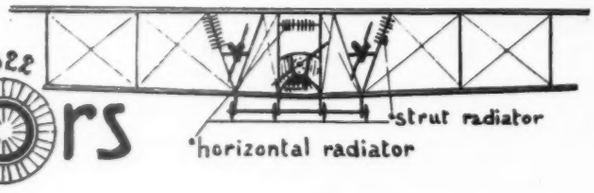
The Swallow Airplane Mfg. Co.

Wichita, Kansas

Agents
Victor Dallin, 660 Fern St., Lansdowne, Philadelphia, Pa.
The Pine Valley Flying Field
G. V. Aerial Transportation Inc.
Bartlesville, Okla.
Phillips & Bowman
54 North Yorktown
Tulsa, Okla.

Lamblin radiators





used all over the world **on more than 10,000 aircraft**

Fitted to the winners of the following events: Gordon Bennett Cup; Deutsch Cup, 1920, 1921, 1922; Pulitzer Trophy, 1921; Circuit of Brescia; London Aerial Derby, 1922, 1923; the British Speed Record; Grand Cup of Italy, 1921, 1922; Lamblin Cup, 1923, 1924; Zenith Cup, 1923, 1924; Olympic Games Cup, Antwerp; Morane Challenge; Grand Prize of the Aero Club de l'Ouest (France); Grand Prize for Transport Planes (France), 1923, 1924; World Duration Record; World Speed over Distance Records (Airplanes and Seaplanes), World Altitude Record.

For particulars apply to

ETABLISSEMENTS LAMBLIN 36, BOULEVARD BOURDON, NEUILLY-SUR-SEINE, FRANCE

DOPES

PIGMENTED DOPES
VARNISHES ENAMELS

TITANINE

MADE BY

TITANINE, Inc.

UNION, UNION COUNTY, N. J.

Contractors to U. S. Government

SHOCK ABSORBER CORD

Pioneers in the Manufacture of Elastic Cord for Shock Absorbers in this Country.

Principle Producers of Cord for Canadian and U. S. Governments during the World War.

Fully Equipped for the Largest Requirements or Any Experimental Tests.

J. W. WOOD ELASTIC WEB CO.

STOUGHTON, MASS., U.S.A.

THE Aircraft Service Directory

WHERE TO PROCURE EQUIPMENT AND SERVICES

INCLINOMETER

PIONEER INSTRUMENT COMPANY

MAIN OFFICE AND FACTORY BROOKLYN NEW YORK

WASHINGTON 441 STAR BUILDING — PARIS 97 BOULEVARD SAINT MICHEL — SAN FRANCISCO 15 SPEAR STREET

BELLANCA

6 Seater with 90 hp. OX5
8 Seater with Hispano

COLUMBIA AIRCRAFT CORPORATION

BOX 17, HASBROUCK HEIGHTS, N. J.

G&O Radiators

Exceptional Quality in material, workmanship and design.

THE G & O MANUFACTURING CO.
NEW HAVEN CONN.

LUDINGTON EXHIBITION COMPANY

Sport Farman Ships
Aerial Taxi Service
Exhibition Flying

Office: 810 Atlantic Bldg. PHILADELPHIA — Flying from Pine Valley, N. J. PINE VALLEY, N. J.

—PETREL MODEL FIVE—

—Super-Performance In the 3 Seater Class—
—Seaplane or Landplane to Suit Your desires—
—Air Cooled or Water Cooled Motors—

Details on Models Four & Five gladly furnished on request

HUFF DALAND AERO CORPORATION

OGDENSBURG, N. Y.

SERVICE TO AIRMEN

That is the why of this page. If you are eager to offer such service, write us for rates for this space.

AVIATION
225 Fourth Avenue New York City

The Highest Grade of New Flying Boats of HS2L Type on the Market

with or without power plant, completely assembled ready for flight, or packed in boxes ready for shipment, at our Baltimore warehouse—Guaranteed 100% Complete—For purchaser of unassembled boats, liberal space for assembly will be allowed free of charge. *Terms can be arranged. Aircraft Material of all Descriptions.*

COME DOWN AND LOOK OVER OUR STOCK

Box 831 F. G. ER C:ON Baltimore, Md.

NEW YORK UNIVERSITY

Courses in Aeronautical Engineering and Industrial Aviation

For catalog apply to
The Dean, College of Engineering, New York University, University Heights, New York City

WE MAKE A SPECIALTY OF

Curtiss Airplanes, Motors and Parts

You will find that our goods are reliable and our prices right.

G. S. IRELAND, CURTISS FLYING FIELD GARDEN CITY, N. Y.

MATTHEW B. SELLERS

Consulting Aeronautical Engineer

Ardsley-on-Hudson, N. Y.

FIVE PASSENGER BREGUETS

With Renault or Liberty Motors. Landing speed 32 miles per hour; high speed 118; useful load 1250 lbs.; ceiling with load, 22,000 ft.; gas consumption, 15 gallons per hr. high lift wings; duraluminum construction throughout. Best performing ship ever known. Prices $3,800.00 to $6,250.00. Extra motor and parts.

YACKEY AIRCRAFT CO.

810-818 Desplaines Avenue
FOREST PARK, ILLINOIS (Suburb of Chicago)

Army Surplus Airplanes and Supplies

Standard J1—OX5, OXX6, and Hispano 150 motored, $750. Curtiss JN4D—OX5 motored, new and used, $400. Avro and Thomas Morse Scouts, new and used

Motors, Hispano 150, Hispano 220, Curtiss OX5 and OXX6.

Wings, single or sets—Standard, Curtiss JN4, or Canuck. Special bargain tail units; Curtiss JN4 and Canuck rudders, $4. Propellers, parts, dope, linen, tires, wheels, tubes—immediate shipment. Resistal goggles, $3; special price larger orders.

Price List on Request

Marvin A. Northrop, 200 Builders Exchange, Minneapolis, Minn.

JENNIES, CANUCKS AND STANDARDS

Among the last of the good ships at low prices

We are offering now the best ships of the above types that we have ever placed on the market. Range in price from $500.00 to $1200.00.

Parts, spares, supplies. Hissos, OX5s, Liberties.

We solicit your correspondence.

SAN ANTONIO AIRWAYS, INC.

509 Navarro St., San Antonio, Texas. Love Field, Dallas Texas.

Harold Evans Hartney

Aviation Scientist and Consultant

(President, Yellow Aircab Company of America)

528 Transportation Bldg., Washington, D. C.

AIRCRAFT SERVICE DIRECTORY
CONTINUED

WANTED--PROPELLER MAKERS

We have openings for several reliable men, capable of completely finishing propellers to strict government specifications. Must be able to read blue print. Only competent men, having previous experience on government work, need apply. Steady work, good wages and opportunity for advancement to workers. Give entire qualifications and references in first letter.

HAMILTON AERO MANUFACTURING COMPANY
No. 37 ERIE STREET MILWAUKEE, WISCONSIN

Aircraft Engine Design and Development

GLENN D. ANGLE
Consulting Engineer
5-151 General Motors Building,
Detroit, Michigan

OX5 MOTORS

Brand New	$250.00
Used Six Hours	$175.00
Gov't Overhauled	$125.00

ART. ROZA
1517 SO. HARDING AVE. CHICAGO, ILL.

LIBERTY "12" AVIATION ENGINE PARTS

ASSEMBLIES, SPECIAL EQUIPMENT AND TOOLS ARE CARRIED IN OUR STOCK ROOMS FOR IMMEDIATE DELIVERY

JOHNSON MOTOR PRODUCTS INC.
518-522 WEST 57TH STREET NEW YORK, N. Y., U. S. A.

EDWARD P. WARNER
Consultant in Aeronautical Engineering
and
Commercial Operation of Aircraft.
Mass. Institute of Technology
Cambridge, Mass.

GROWING FAST

You will see from this and recent issues of AVIATION that the
AIRCRAFT SERVICE DIRECTORY
is expanding all the time. There is one reason only for this—
DIRECTORY ADS PAY

CLASSIFIED ADVERTISING

FOR SALE: OX5 Canuck, engine good, upper wings poor, otherwise fair, $300.00 f.o.b., Pine Valley, N. J. Ludington Exhibition Co., Inc., 810 Atlantic Building, Philadelphia, Pa.

FOR SALE—CANUCK in wonderful condition. Fabric fresh and tight, motor turning 1425 on ground. Ship has been carefully used and never cracked up. $850, or will trade for closed car of equal value. Prefer Hudson coach. Write for full particulars to Box 327, AVIATION.

FOR SALE: J1 Standard equipped with new 150 hp. Model A Hispano motor, also OX5 Standard in perfect condition. Will sacrifice for quick sale. H. H. Echterling, 546 Sibley Street, Hammond, Ind.

FOR SALE: Aeromarine motors type D-6 and D-8 new complete with tools and spares. Fine jobs at very low prices. Lee Templeton, 407 W. Main St., Norristown, Pa.

"It pays to use your Classified Ads"

Writes Paul Neff of Iola, Kansas

His experience is typical of users of Aviation Classified Ads. You can convince yourself at trifling cost.

CHAMPION

is outselling throughout the world because it is the better spark plug.

Champion Spark Plug Co.
Toledo, Ohio
Champion Spark Plug Company of Canada, Limited
Windsor, Ontario

CHAMPION
Dependable for Every Engine

Setting the Pace to the World

It was the "BRISTOL" Jupiter engine which demonstrated to the world that the high-powered radial aircooled aero engine could be made as reliable and economical as the very best water-cooled aero engines, securing at the same time great saving in weight, increased maneuverability, much greater simplicity, a complete absence of far-too-frequent water-cooling troubles, and many other advantages. By sheer merit of efficiency the Jupiter engine maintains its leading place. Today, at any rate for use with a wide range of aircraft, the 400 hp.

"Bristol"

JUPITER AIRCOOLED RADIAL ENGINE provides an all-round measure of efficiency equalled by no other aero engine

RECORDS OF JUPITER EFFICIENCY

GOVERNMENT TESTS

In Great Britain:—

50 hours Type Test—September 1921
50 hours Type Test—February 1924
150 hours test at 90% full power (including 50 hours non-stop)—March 1923

In France:

50 hours Type Test—June 1922
50 hours Type Test—June 1924
150 hours test at 90% full power (including 40 hours non-stop)—July 1924

FLIGHT RELIABILITY

An aircraft, in which the Jupiter engine had to be run at over 90% full throttle throughout, was tested out for 150 hours by Imperial Airways Ltd. on the London-Cologne route. Inspection at the end of this period showed the condition of the engine to be excellent, and the steady running, ease and economy of upkeep, and freedom from trouble, earned the highest appreciation of Imperial Airways Ltd.

EFFICIENCY IN EXTREME CLIMATES

In March 1924 the Swedish Government thoroughly tested out a Jupiter-engined aeroplane at Kiruna within the Arctic Circle. In every one of a searching series of tests the results were perfect. After the machine had been left in the open all night at minus 20° C. the engine started the second time the propeller was swung. A Swedish pilot flew the machine for 1250 kilometres in 6¼ hours in one day and reported that "the engine ran like a clock."

Under tropical conditions in Egypt and Iraq the results have been equally satisfactory and there has been complete freedom from trouble. Top overhaul after over 100 hours flying has shown the condition of the engine to be excellent.

The Jupiter engine is being manufactured under licence in France, in Italy, and in Czecho-Slovakia

Designers and Manufacturers:—

THE BRISTOL AEROPLANE CO., LTD.

FILTON — BRISTOL — ENGLAND

Cables:—Aviation, Bristol

THROUGH the entire history of aviation over a period of 20 years the Wright organization has maintained its high position.

Its leadership has been soundly built upon extensive research and intelligent engineering development, although its experience includes the manufacture of aeronautical equipment in extremely large quantities.

The Wright organization, ever mindful of its first achievement—the art of flying—continues to contribute each year its best ability and engineering experience to the advancement of flying.

WRIGHT AERONAUTICAL CORPORATION
PATERSON, N. J., U.S.A.

WRIGHT AIRCRAFT

"The Identification of Incomparable Service"

Navy ships equipped with Wright Air Cooled Engines flying in formation over San Diego, California